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Address

THE GROWTH OF NEUROLOGY.

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON NERVOUS AND MENTAL DISEASES, AT THE FIFTY-SEVENTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, BOSTON, JUNE 5-8, 1906.

WHARTON SINKLER, M.D.

PHILADELPHIA.

I am very glad to have this opportunity of thanking you for the honor conferred on me in making me chairman of this Section. It is a distinction of which one may justly be proud, for the Section has grown from a small beginning in 1891 to one of the most important and widely known in the American Medical Association.

It is interesting to consider the development of the Section. Prior to the year 1891 there was no section devoted to this branch of medical science. In 1887 a new section was formed and this was called the Section on Medical Jurisprudence, Chemistry and Psychiatry, and this by expansion began to include the consideration of nervous diseases. In 1891, the subject of neurology having become so prominent in the discussions of the Section, the title was changed to the Section on Medical Jurisprudence and Neurology. In 1900, the scope of the Section had become such that it seemed advisable to again change the name, and it then became the Section on Nervous and Mental Diseases. Thus we have kept abreast of the progress in neurology throughout the world.

The list of men who were influential in the organization and development of this Section is well worth considering, for it contains among the names those of the brightest lights in neurology in this country. As chairman of the Section on Medical Jurisprudence, begun in 1887, are to be found the names of E. M. Reed, J. G. Kiernan, T. B. Evans and T. D. Crothers. In 1891, in the Section on Medical Jurisprudence and Neurology, H. N. Moyer was elected chairman. He was followed by Charles K. Mills, in 1892, and in regular order came J. G. Kiernan, D. R. Brower, T. D. Crothers, W. J. Herdman, C. H. Hughes, Frederick Peterson, H. T. Patrick, H. A. Tomlinson, R. A. Dewey, F. W. Langdon, F. Savary Pearce and J. H. McBride.

To those who can look back thirty years, it is amazing to consider the progress in the knowledge of the diseases of the nervous system. Until the latter half of the nineteenth century, no special attention was given to this branch of medical science in the schools, and few physicians ventured to claim neurology as a specialty. How different it is now! There is not a college of any size in the country which has not a chair of nervous and mental diseases, and almost every city has its neurologic society. The interest taken in neurology has increased in the profession at large, and this is shown by the large attendance at the meetings of this Section by members of the Association whose practice is not especially devoted to nervous diseases. It has been for years the custom of the general practitioner to regard the study of nervous diseases as not only difficult and obscure, but unprofitable, and for this reason he has put it aside and felt that there was no use in trying to do anything in the way of diagnosis or treatment of a case of nervous disease. It is different now, and the effect of teaching in the colleges is obvious to every one who meets the general practitioner in consultation. The meetings of the Section have each year been of greater interest and value to the members, not only in the character of the papers presented, but in the discussion of them. This year I can point with pride to our splendid program, which will be seen to include not only many papers on mental diseases, their etiology, pathologic anatomy and medicolegal relations, but the consideration of many organic and functional nervous diseases. It is noteworthy also to observe that the papers presented are not merely reports of individual cases, but a critical and scientific study of the nature of the various diseases considered. No attempt has been made to present a symposium on any special subject, for the reason that this would have taken so much time that many valuable papers would have been of necessity excluded. As it is, the papers offered have been in excess of the number allowed by the by-laws of the Association. This number, as you know, is forty. Had we been able to accept all which have been presented, there would have been at least fifty, and it is much to be regretted that many important contributions had to be declined on account of the program being full when they were presented. I believe that in the future it will be a wise plan to limit the time for the reading of each paper to twelve minutes and the discussions to five minutes, so that all papers which are offered may be presented before the Section. I am not in favor of requiring that the papers shall be read in abstract, as this mars their interest and value, but by excluding lengthy histories of cases and condensing pathologic reports it would be easy to present almost any paper in the space of ten or twelve minutes.

An innovation this year, and I believe that it is one which will accrue to the advantage and importance of the Section, is that of printing and distributing the transactions of the session. This will include all of the papers and discussions, together with anything else of importance connected with the session. Some of the other sections have published transactions, but this is the first time that the Section on Nervous and Mental Diseases has undertaken the task. I trust that this will meet with the hearty approval and co-operation of the members of the Section. In order to secure the publication of the transactions by the Association, it will be necessary to secure 75 subscriptions at $1.00 each. This does not cover the total expense, the balance being borne by the Association. The transactions are bound in cloth

and make a handsome volume. We must, therefore, look to the members to subscribe to one or more copies each.

Through the courtesy of Dr. James J. Putnam, the Section has been invited to hold one of our meetings at the Massachusetts General Hospital, so as to enable the members to visit the neurologic wards in this famous old institution and to have demonstrations of different sorts made before and after the meetings, and to allow the presentation of cases. We have selected Thursday afternoon for the meeting there.

I am sure that all of the members of the Section share with me the regret that I feel in the absence of the former secretary, Dr. D. I. Wolfstein. Last autumn Dr. Wolfstein, who for many years had been in poor health and had had two or three attacks of renal colic, was obliged to undergo the operation of nephrectomy. He made a good recovery, but was so generally shattered in health that he has been obliged to give up practice and go abroad for a year. During his term of service he proved a most valuable and efficient officer of the Section and did much toward promoting its growth and prosperity. We have been fortunate in securing the services of Dr. Weisenburg, who has been appointed to his place.

It is a source of some regret that we have no distinguished foreign neurologists with us. Your chairman and secretary sent invitations to several of the most distinguished men in this line in England and on the continent, but each one, while expressing great appreciation of the honor conferred on him, was obliged to decline for some good and sufficient reason. The International Medical Congress at Lisbon and the meeting of the British Medical Association at Toronto interfered with the acceptances in most cases.

The members of the Section have received a cordial invitation from Dr. Flood, the superintendent of the Massachusetts Hospital for Epileptics at Palmer, Mass., to visit that institution. The hospital is situated in the village of Palmer, about 84 miles west of Boston. To those who are interested in the colony treatment of epileptics and the insane, this institution affords an admirable opportunity for study.

Original Articles

THE MOTOR DEGENERATIVE SEQUENCE IN DEMENTIA.*

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In the infant pantomime plays the principal part in expression, and as the child grows older this pantomime becomes more complicated and graphic; especially in so far as the movement of the eyes, the muscles of the face and of the arms is concerned; so that the impressions from the environment and the emotions involved are reflected in these movements. In those individuals who are born blind, this association of pantomime with the afterward acquired vocal or graphic means of expression persists, so that the muscles of expression reflect the emotions in any given form of mental activity. In the ordinary individual, however, these modes of expression are eliminated by education and the exigencies of social intercourse; which require the putting on a mask that shall conceal the effect of the conditions in the environment on the individual so far as they are emotional. Therefore, as the result of training and the influence of convention, and just in proportion with their extent, there is the exercise of restraint on the motor manifestations of mental activity. However, when, as the result of defect in the constitution of the individual, and the influence of untoward conditions in his environment, there is loss of mental capacity; and, therefore, of the power of inhibition, or interference with the means of expression; there is the tendency toward the reversion to these primitive auxiliaries of expression, to supplement the acquired faculty that the loss of capacity for control has rendered more or less inefficient, just as occurs in the confusion of mental aberration and after aphasia. When this loss of mental capacity becomes extreme, or the mental alienation of the individual makes him entirely introspective, there again develops the tendency to the suppression of the motor manifestations of mental activity; not as the result of volition, but because of the loss of capacity to generate them; and, as these emotions are less frequently generated, there follows a sequential and essential degenerative motor change which has its origin in that form of atrophy in the motor generative portion of the brain that results from disuse.

The dependence of motor manifestations on mental activity is not well understood, and too little thought of with relation to the significance of variation or suppression of muscular activity as a sequence to loss of mental capacity. We lose sight of the fact that very few forms of motion are in direct response to external stimuli. Aside from those motor manifestations that are so intimately associated with emotional activity, and are included under the term expression, there are numerous other forms of muscular activity that are a more or less direct response to the stimuli resulting from mental processes, even although they are not a direct reflex of the conditions involved in these processes. These motor generative impulses are centrifugal, and have their basis in the liberation in consciousness, as the result of indifferent stimuli, of pre-existing impressions that give rise to them. To illustrate, a man may be sitting under a tree, on a hot day, completely engrossed in a train of thought that has no relation to his environment. The sun reaches a position so that it shines directly on him. After a time, and without any conscious interruption of his train of thought, he will change his position so as to again get into the shade. The muscular movements involved in this change of position, while reflex, are extremely complicated and involve the intervention of intelligence. A new-born child, or a demented person, would not and could not change his position under similar circumstances, although both might manifest evidence of discomfort by irregular and inco-ordinate movements. Even in acute mental aberration, the accompanying loss of capacity has the same effect; because, in delirium, stupor, or the morbid introspection associated with depreciatory or persecutory ideas, extreme discomfort, or even the presence of physical danger, if apprehended, may not give rise to any movements that have their origin in centripetal stimuli. There can be no doubt but that these impressions reach the brain; but there is no active consciousness, and the correlation and co-ordination of these impulses does not take place; although we have found, as the result of repeated investigation, that the individual is impressed by them, and can recall the nature of these external impressions in

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

detail, after the subsidence of the centrifugally generated processes, that for the time being dominate consciousness.

There are numerous other forms of muscular activity that are more or less in direct response to the stimuli from mental processes. These movements are largely combinations of the survivals of the simple changes in the multicellular organisms necessary to approach food substances or avoid sources of danger. Aside from these simple forms of motor manifestation, there are the more complicated movements involved in sexual attraction; which bring about changes in form, posture and expression. The growth of these different forms of muscular activity, and their complication in accordance with the development of the organism in response to the growing complexity of its environment, results in the multiplication and variation of these motor manifestations; and their combination and recombination to such an extent that they become abstracted from their primary relation, are no longer entirely reflex, but automatic; supplementary and centrifugally generated in response to stimuli coming from the vegetative or reproductive organs. That they are automatic is shown by the fact that they are manifested independently of active volition; and that they are persistent in their primary form is illustrated in the movements, inco-ordinate but instinctive, of the new-born child.

The study of the development of the different parts of the cerebral cortex confirms this contention. The branching out of the brain stem to form that part of the cortical envelope concerned with the special senses; the later association of these centers, and their relation with the centers of emotion; and, finally, the extension forward of projections of those motor areas having to do with the most complicated and completely abstracted forms of activity involved in expression, both vocal and graphic. Then the development around these areas of a cortical mantle apparently purely inhibitive and dirigent in its function; and which, in its turn, becomes abstracted from any direct relation with the motor generative activities it inhibits and regulates. This abstraction of the functions of that part of the cortical mantle that has to do with what are ordinarily termed the processes of intellection, that is, the processes of correlation and co-ordination, is important for us to appreciate in order that we may understand how mental reduction affects motor activity, and finally brings about degenerative change from want of use. It is too little understood that the primary function of the so-called higher cortical centers of the brain is that of inhibition; and that their relational, co-ordinative and dirigent functions are an after development. Therefore, in the progress of degeneration in the intellectual sphere, loss of capacity comes primarily in this dirigent, co-ordinative and relational function, leaving the primitive inhibitive function comparatively unaffected. So that impulses coming through the different avenues of special and common sensation are simply registered, with the result that motor activity does not follow, the degree of loss of capacity for correlation and direction affecting the extent to which capacity to generate motor activity is lost. The process of degeneration follows this order. Those forms of motor activity involved in the most abstract forms of expression are the first ones to be lost; and this failure shows itself in those co-ordinated movements that are the last in the order of development. They are manifested in stammering, slurring of sounds, dropping of letters and syllables, tremor in writing, running of words together, elision of letters or syllables, and, finally, imperfectly-formed characters, which gradually degenerate into a running wave-like mark, or irregular and formless angular strokes. We have seen these degenerative changes go on from one form to the other until there was neither vocal nor graphic expression; and then as gradually disappear in the reverse order. They are most common in general paresis, but are not infrequent in alcoholic and syphilitic insanity, and we have seen them in their grosser forms in primary degenerates. Some years ago we reported a number of such cases in another connection, and from that report the two following are selected as illustrative:

The first, a case of syphilitic brain disease, following a severe convulsion, developed paraphasia, myotonia, and paresis with tremor; also complete inhibition of intellectual function, with suspicion and blind resistance toward any effort in his behalf. He gradually became worse, the paraphasia becoming complete motor aphasia, the myotonia degenerating into athetosis, finally ending in muscular tremor, with complete motor inco-ordination. At this stage another profound convulsion occurred, with right hemiplegia. This was followed by gradual recovery, passing upward through the different stages traveled on the downward path, until he was able to walk about, feed himself and speak intelligibly. This transition was repeated with varying degrees of uniformity three times in eight months, each transition showing the stages less well marked and being of shorter duration until finally, following another severe convulsion, there was complete annihilation of mental life and voluntary motion. He lived, however, for about three months in this state. A necropsy was not allowed. The other case, a young girl, a low-grade imbecile, who came into the hospital with a history of epileptoid convulsions with rapid mental reduction. On admission she could express her wants, answer questions and care for herself. Degeneration proceeded very rapidly, however, paresis became marked, and she finally became bedfast. The vegetative functions remained intact, and the excrementary functions were performed automatically. There was no co-ordinated muscular movement or mental activity. She laughed and cried like a baby, had no articulate expression, and did not comprehend spoken words, although she apparently understood pantomime. She was without capacity to relate or co-ordinate external impressions. She, too, gradually recovered; passing progressively upward the path she had traveled downward. She afterward acquired considerable manual dexterity and learned to read.

Again, these degenerative changes may only involve the most highly abstracted manifestations, such as those involved in the co-ordinate expression of the most complicated relations, or the finer movements involved in manual dexterity, as we see them manifested in confusion and inco-ordination in senility.

It is interesting to note in this connection that the activities involved in the functioning of the vegetative organs do not normally give rise to sensations that are apparent in consciousness, or that directly stimulate the dirigo-motor apparatus, and while these functions may be affected by conditions in emotional activity this affection is indirect through the vasomotor apparatus, and the functional stimulus is reflex. Therefore, there may be, as in trance conditions and ecstacy, complete absence of motion and intelligence, without any interference with the functional activity of the vegetative organs. In those cases of insanity with which there is associated disease in the vegetative or reproductive organs, their functional activity results in painful sensations. These may give rise to all sorts of disagreeable and bizarre manifestations in consciousness, and thus come directly under the inhibitive influence of the higher cortical centers, with the result that their func-

tional activity may be perverted or inhibited, without the presence of organic change in the viscera themselves, so that the individual believes that he can not swallow, that the stomach is distended, that the intestines are paralyzed, contain poison or have disappeared from the abdominal cavity; and, again, that the anal sphincter is permanently closed or relaxed, with the result that so far as these functions are volitional they are inhibited.

After mental reduction proceeds to the extent that it involves loss of memory and power of attention, there begins to be evidence of relaxation of the normal tension in the facial muscles and the eyeball; so that there is not only loss of mobility in the facial muscles, but the lack of expression is increased by the dullness of the sclerotic, and the flattening of the anterior chamber that follows the loss of tension in the eyeball.

The next change to become apparent is the involvement of the muscles of the hand and arm, resulting in the loss of the finer movements and manual dexterity. As a rule, this is as far as the degenerative changes go, unless the mental reduction becomes extreme. It is interesting to note that these motor degenerative manifestations are similar to those present in senility, except that in dementia the paresis is spastic, while in senility it usually takes the form of tremor. There is a closer resemblance to the paresis of dementia than that which accompanies paralysis agitans, and this is particularly true of the involvement of the muscles of expression. When dementia becomes extreme, and especially in the course of primary degeneration, the motor disturbance may be considerable and manifest itself in spastic paralysis, involving first the musculature of the hand and forearm, so that the fingers become flexed in the hand, the hand on the wrist, the forearm pronated and flexed on the arm. In the lower extremity the involvement of the muscles follows the same order, but is more apt to be symmetrical and does not become so extreme. Finally, the head becomes flexed and the neck muscles rigid. That these changes are not due to primary involvement of the cord is shown by the fact that they are present in temporary cerebral conditions, where the manifestations of mental reduction are the result of accumulation of fluid in the meninges, or the paresis of autointoxication. Also, in dementia they may appear and disappear at first, and it is only after mental reduction becomes extreme that they are persistent. The following case illustrates this extreme involvement:

C. C., 25 years old, born in Sweden, laborer. Father living, mother died of smallpox. Father suffers from "asthma and rheumatism."

The patient was always less intelligent than his brothers and sisters, and as he grew older became irritable and morose and subject to outbursts of ill-temper and violence. Since puberty he had grown more dull and his temper more ungovernable. He was also a chronic masturbator. For three months before coming to the hospital he had been growing more stupid, sullen and filthy in his habits. He was also brutishly violent at times.

When admitted he was suffering from indigestion and constipation. The extremities were cold, blue and clammy. The tongue protruded hesitatingly in the median line; speech was slow and indistinct, and there was a coarse tremor in the tongue. The reflexes were present, but co-ordination could not be tested. Clonus was present. He did not take food voluntarily nor sleep well.

His general condition improved during the first month, and he got so that he would feed himself and answer simple questions. Soon after coming to the hospital the fingers of the left hand began to contract, and were soon firmly flexed in the palm. Edema set in also in the left arm and both legs. After a period of two months he again improved, was out of bed, fed himself, answered questions, and would go out walking. He did not pay any attention to his surroundings, however, and was filthy in his habits. When walking he assumed a stooped position, with the hands pressed on the abdomen; the head bent forward and to the left. Most of his movements were apparently automatic. During the next two years his condition was practically unchanged. Sometimes the contractures would almost disappear, but with each return became more marked until finally, in the spring of 1897, the hand and forearm, foot and leg, on the left side, were so much involved that he could no longer move about or help himself. After he was put in bed it was noted that his lungs were involved in chronic fibroid degeneration, with tuberculous infection.

The contractures gradually became more marked; all of the extremities were involved; he became generally rigid, and was incapable of voluntary movement. He would swallow when food was put in his mouth; the bowels and bladder were emptied automatically; he never spoke nor showed any evidence of intelligence. He died Sept. 3, 1897.

Postmortem, there was marked emaciation and the extremities were distorted by contractures. The skull was very thick, the sutures had disappeared, the diploë was present in only small areas and there was very little cancelous structure. The dura was thickened, but not adherent to the skull. There were 160 c.c. of cerebrospinal fluid. The arachnoid space was distended with gelatinous fluid, especially at the vertex and over the frontal lobes. The dura was adherent along the median fissure from the vertex anteriorly to the prefrontal region and for 5 cm. on either side. The pia was translucent over the frontal lobes and there were white streaks along the vessels over the whole convexity. The convolutions of the frontal and parietal lobes were much flattened and the sulci distended with fluid. The insula was uncovered on the left side and partially so on the right, on account of atrophy of the surrounding convolutions. There was marked dimpling from atrophy over the frontal and parietal lobes also. The ventricles were distended, the ependyma edematous and, in the floor of the fourth ventricle, granular. The cortex was thin, pale and nowhere more than 2 mm. in thickness. The lungs were diseased; the heart, spleen and liver small, and the kidneys the seat of parenchymatous change engrafted on a chronic interstitial nephritis. The generative organs were small and undeveloped.

So far as our observation goes, when the motor degenerative changes follow in the sequence here outlined, that is, beginning first with those motor activities last in the order of development, and follow in the regular order, the change is a permanent one; but when this sequence is departed from, or the paresis is not symmetrical and progressive, there is always the probability that the power of motion will return more or less completely. Postmortem in these cases, the external appearance of the brain and its coverings is always the same. Where there has been much spastic involvement areas of pachymeningitis are always present, with more or less recent extravasation of blood over the inner surface of the dura. The arachnoid space, especially over the anterior and middle portion of the brain, is filled with gelatinous fluid. The pia is translucent or partially opaque, with white streaks along the vessels, and there are delicate bands of adhesion between the pia-arachnoid and dura over the frontal region superiorly and at the base. The convolutions of the frontal lobes are very much shrunken and the fissures gape widely. The insula is partially uncovered by the atrophy and retraction of the convolutions surrounding it and there are marked areas of atrophic dimpling in the superior parietal lobule and in the angular gyrus. The visual area in the cuneus seems never to be involved to an appreciable extent macroscopically. Everywhere over the superior portion of the frontal lobes and the

antero-lateral portion of the parietal lobes there is an essential shriveling of the cortical gray matter and the underlying white substance. Whereas, in ordinary dementia, when the sequential motor involvement is not marked, the atrophy is present only in the frontal lobes, anterior to the precentral fissure, and while the convolutions are flattened the fissures do not gape widely and the white substance is not involved perceptibly. Histologically, the changes found are degenerative, and in one case we have traced them to the lumbar enlargement. Usually they only involve the cortex and fibers of association in the brain, and there are always numerous healthy cells and fibers in a given field. Besides, the degeneration is not focal, nor are there any continuous areas, or even groups of cells, unless, on account of the presence of some accidental condition, like that produced by the occlusion of a blood vessel. Then the changes which result are destructive and need not be confounded with the general degenerative changes. The extreme cases of motor degenerative change are practically confined to primary degenerates, where the mental reduction has begun soon after puberty, progresses rapidly and becomes extreme. This tendency is, in its turn, most marked in those individuals in whom there is the most evidence of defective development and the greatest number of the stigmata of lack of mental capacity. They are usually the offspring of the alcoholic and syphilitic, seldom of the insane or the tuberculous.

THE BLOOD PRESSURE IN PARESIS.*

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There is a general belief that the blood pressure in paresis is low. This belief is based mainly on the observations of Pilcz,[1] who found normal tension in the earlier stages, falling tension as the disease advanced, with extreme hypotension in the terminal states. Janeway[2] regards this hypotension as analogous to the pressure of other wasting diseases but rather more pronounced. Pilcz used the Gaertner instrument. Alexander,[3] a year later, stated that the blood pressure in paresis was low in the end stages. From an examination of ten cases Craig[4] found the blood pressure in paretics high in the depressed condition, low in the excited. He regards his observations as favoring but not establishing Cramer's theory, that blood pressure is a cause of mental states and rapid changes.

These observations would naturally lead to the hope that we have in blood pressure a practical aid in the diagnosis of paresis from other nervous diseases.

In view of the great importance of this diagnosis, especially in the early stages, the results of many observations should be tabulated before we can establish a general rule and rely on it as an aid in the diagnosis of the individual case. The following observations are offered as bearing directly on this point. The results tend to show that the blood pressure test, while of great value here as elsewhere in determining the circulatory condition of the individual, is likely to prove of little help in the diagnosis of paresis from other nervous diseases.

I have examined 108 male patients with this disease. The majority of the cases were inmates of the Danvers Hospital, the Worcester Hospital, the Medfield Asylum, the State Hospital at Tewksbury and the McLean Hospital, to the superintendents of which institutions I am indebted for the opportunity. The remainder were seen at the Neurologic Clinic of the Massachusetts General Hospital and in private practice.

The following classification shows the comparative ages: Under 40, 28; 40 to 50, 41; 50 to 60, 33; over 60, 6.

Among these 108 cases definite cardiac, renal or arterial diseases was absent in only 44 cases.

The Riva-Rocci instrument was used in all observations. In certain of the cases first examined the 5 cm. cuff was used, but was discarded on account of its unreliability, and the cases in which it was used as far as possible re-examined. The majority of the tests were made with either the 9 cm. cuff of the Riva-Rocci type, or the 12 cm. cuff of the Janeway. The observations with the 5 cm. cuff are included in the tables, and offer an excellent example of its disadvantages.

My observations would not quite justify the conclusion that a width of at least 12 cm. is necessary, for I have found the registration of the 9 cm. cuff quite constant, and varying so little from that of Janeway that for clinical purposes the former seems to me to answer every requirement.

Ordinary precautions only were taken in making the observations, for example, having the arm on a level with the heart, and snugly adjusting the cuff. Since the question at issue was that of the practical value of the blood pressure in diagnosis, no attempt was made to reduce the observations to the accuracy of physiologic experimentation. The average blood pressure of all the cases, without reference to heart, kidney or arterial disease, was as follows:

Age.	5 cm. cuff.	9 cm. cuff.	12 cm. cuff.
Under 40	145 mm.	123.4 mm.	125 mm.
40 to 50	152 mm.	124 mm.	128.75 mm.
50 and up	150.3 mm.	140 mm.	147.1 mm.

These figures are certainly well above the average normal, which would, perhaps, be not far from 115 with the broad cuff for males under 40, 138 for males over 50, and somewhere between these figures for males between 30 and 40.

This result would contraindicate the impression I believe to generally prevail, that the blood pressure in general paralytics on the whole is low. On the contrary it would indicate that the blood pressure in this disease is, on the whole, high. This would naturally result from the large proportion of cases presenting hardened arteries, with tendency to enlargement of the heart and to chronic renal degeneration. In point of fact it is doubtless these conditions that we are measuring rather than the general paralysis. Then, too, it is very common for paretics to overeat and to take on flesh during the demented stage, a fact which tends to produce higher readings, even with broad cuff.

The renal complication was allowed for by Pilcz, who noted that when Bright's disease was present, hypertension was in evidence. He also noted that depressive mental states, as well as remissions of symptoms, brought about a rise.

It would seem, then, that before using the blood pressure as a diagnostic aid in general paralysis, we must

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Wien. klin. Woch., 1900, p. 277.
2. The Clinical Study of Blood Pressure. Appleton & Co., 1904, p. 253
3. Lancet, 1901, vol. ii, p. 18.
4. Lancet, 1898, p. 1743

eliminate nearly half of the cases, and only examine the others at certain stages of the disease. Nor is it certain that even after these precautions have been taken hypotension will be found sufficiently constant to permit of making a rule.

With this question in view I have tabulated the results of the examination of the 44 cases in which there was no record of arterial, cardiac or renal disease, with the following results:

Age.	5 cm. cuff.	9 cm. cuff.	12 cm. cuff.
Under 40	148.4 mm.	110 mm.	115 mm.
40 to 50	151 mm.	125.9 mm.	.....
Over 50	168.5 mm.	129 mm.	118 mm.

These figures are somewhat below the average normal of health. This would seem to indicate that the tendency of the disease itself, unopposed by arterial, cardiac or renal disease, is toward hypo- rather than hypertension. When we consider, however, the moderate degree (except in certain terminal cases) of the difference between this and the normal average pressure, together with the variations from which these averages were made up, it is evident that this test is hardly likely to become a prominent one as an aid in the diagnosis of paresis in its early stages from other nervous diseases, though it may be of great value in determining the condition of the circulatory system of the individual.

Even if it should be established that paresis has a characteristic low pressure, recent observations on the blood pressure in psychoneurotics would lessen the diagnostic value of the knowledge. The chief hope lay in the diagnosis of early paresis from the psychoneuroses, in which the pressure was proclaimed high by Heine. It would appear from the investigations of Krauss,[5] and of Romberg[6] that variability and instability of pressure rather than high pressure, is the characteristic of the psychoneurotic. Dr. Joseph Pratt, who has had extended opportunity for study of these cases in the Medical Out-patient Department of the Massachusetts General Hospital, tells me that his experience confirms this observation.

As an example of the variations, the limits (for males under 40, broad cuff) were 80 and 155.

With regard to the prediction of death by fall of blood pressure noted by Pilcz, it is of interest to note two moribund cases seen at the Danvers Hospital, one of whom died within 12 hours, the other within 48 hours, and a third moribund case, a female, seen at the Medfield Asylum. The blood pressure in the first of these cases was 97 mm. with the narrow cuff, in the third, 105 mm. with the 9 cm. cuff, both low records. In the second case, however, the pressure was 183 mm. with the narrow cuff, a high record. There was little to choose in the general condition of these patients. The urine and arteries (radial) were normal in the case of high tension, the heart dulness was slightly increased; in the two cases of low tension the arteries were atheromatous, the heart dulness increased. The arms in all three cases were small.

With regard to the question of low blood pressure in mental exhilaration and the opposite in depression, I have had no opportunity of studying the same case through changes of emotional condition. The majority of the patients at the time of examination were euphoric, expansive without excitement, or simply apathetic and demented.

In eight cases only marked psycho-motor excitement was present.

CASE 1.—Male, 35, with normal radial and temporal arteries, a faint trace of albumin in the urine, and a few hyaline casts; heart negative. Marked excitement. Blood pressure, Janeway cuff, 135.

CASE 2.—Male, 50, with slightly thickened arteries. Heart negative. Slight trace of albumin with a few hyaline casts. Grandiose and elated. Blood pressure, narrow cuff, 97.

CASE 3.—Male, 61, with moderately thickened arteries, normal heart and a trace of albumin in the urine. Excited, singing, maniacal, with formal associations. Blood pressure 120, Janeway cuff.

CASE 4.—Male, 49. Atheromatous arteries, normal heart and urine. Excited. Blood pressure 135, Janeway cuff.

CASE 5.—Male, 49. Arteries and heart normal. Trace of albumin in the urine, sediment negative. Exhilarated. Blood pressure 160, Janeway cuff.

CASE 6.—Male, 35, with slightly thickened arteries. Negative heart and urine. Exhilarated. Blood pressure 125, Janeway cuff.

CASE 7.—Male, 36. Slightly thickened arteries. Urine and heart negative; excited and expansive. Blood pressure 130, Janeway cuff.

CASE 8.—Male, 35. Arteries and heart negative. Slight trace of albumin, few hyaline casts. Marked psycho-motor excitement. Blood pressure 135, Janeway cuff.

The pressure of the excited case taken with the narrow cuff was then 97; the average pressure of those taken with the Janeway cuff was 134.3, that is, on the whole, we find readings rather above than below the average of health.

Limiting ourselves to the excited cases without discoverable arterial thickening or cardiac disease, namely, cases 1, 5 and 8, we find a pressure of 135 (Janeway cuff) in a male of 35; a pressure of 160 (Janeway cuff) in a male of 49; a pressure of 135 (Janeway cuff) in a male of 35. These are decidedly high readings.

As far as these cases go, then, they point to high, rather than low pressure, in the excited states of general paralysis. This fact, even if these few cases should prove typical, would not militate against the observation which has been generally accepted, that manic states are accompanied by lower pressure than depressed ones. The emotional condition commonly present in mania was notably wanting in these cases; I refer to the elation and happiness with sense of well-being which is rather the dominant note in simple mania.

The only cases showing marked depression were the following:

CASE 9.—Male, 56. Arteries normal. Slight trace of albumin. Few hyaline casts. Heart normal. Marked depression. Blood pressure 150, Janeway cuff.

CASE 10.—Male, 41. Arteries slightly atheromatous. Heart and urine negative. Extremely restless and depressed. Blood pressure 95, Janeway cuff.

The theory of Cramer that the mental state is largely dependent on the blood pressure has a certain fascination, and I was tempted to hope that a low blood pressure might be found fairly constant in the euphoria, if not in the excitement, of general paralysis. The observations failed, however, to establish this proposition. The difference between the average blood pressure of the euphoric cases and that of cases not euphoric was not sufficient to establish a rule, though the average of the former was somewhat lower. The variations were marked, and pronounced euphoria was found among the cases of high as well as those of low blood pressure. In fact, the most marked atheroma with its cardiac and

5. Krauss: Lehrbuch der Inneren Medicin. J. v. Mering, Jena, 1905, p. 910.
6. Romberg: Deutsch. med. Woch., 1905, p. 1377.

renal accompaniments was found with the most absolute sense of well-being, as shown in the following illustrative cases:

CASE 11.—Male, 56; bedridden. Thickened arteries, with trace of albumin in the urine and systolic murmur. Pronounced euphoria. Blood pressure 145, with Janeway cuff.

CASE 12.—Male, 51. Atheroma. Heart and urine negative. Euphoric. Blood pressure 150, with Janeway cuff.

CASE 13.—Male, 58. Marked hardening and tortuosity of arteries and cardiac enlargement. Blood pressure 190, with 9 cm. cuff.

CONCLUSIONS.

1. The average blood pressure in paresis, taken as a whole, is high.

2. This is doubtless due to the prevalence of atheroma with its cardiac and renal accompaniments.

3. The average blood pressure in cases of paresis without atheroma, cardiac enlargement or renal disorder, is probably somewhat lower than that of health, but the variations are so great that it can not be said to be uniformly low.

4. The test is not likely to prove of great practical value in the differentiation of paresis from other nervous disorders, though here, as elsewhere, it is of great value in estimating the circulatory condition of the individual.

5. These observations are too few to establish a rule with regard to the blood pressure in varying emotional states. As far as they go, however, they tend to show (a) that the excited states of paresis are as likely to be accompanied by high as by low pressure; (b) that mental depression is accompanied by high oftener than low pressure, but that it is not incompatible with low pressure; (c) while the average pressure in euphoria is perhaps somewhat lower than in the other mental states of the general paralytic, it is not inconsistent with high pressure, or with pronounced atheroma with its cardiac and renal accompaniments.

RECENT CONTRIBUTIONS TO THE PHYSIOLOGY OF THE CIRCULATION.*

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The title of this paper is misleading, in that it implies that herein will be found a complete review of all of the advances recently made in the physiology of the circulation. It is hardly necessary to state that it would be impossible to read merely the titles of the important contributions within the time allotted to the reading of this paper. I take it that a full review of all contributions is not what is wanted as an introduction to a symposium on circulatory affections, but rather a consideration, more or less complete, of those advances which, in the present state of our knowledge of the subject, seem to elucidate, or to promise to elucidate, problems of interest to the clinician.

By way of further limitation it might be suggested that from the border-line subjects a choice be made of those contributions which seem to be the most important. Judgment in this matter, however, is difficult; indeed, it is well nigh impossible. Therefore, in order to extricate myself from the difficulty, I have presented most fully those subjects, included in the class specified above, in which I have taken a more or less personal interest.

* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

If it be justifiable to gauge the interest that is taken in a subject by the number of contributions to it, then there is perhaps no other subject which interests a larger audience than the physiology and pathology of blood pressure. The ardor with which this subject is being attacked on all sides does not seem to have been abated by the guarded but rather disheartening conclusions reached by the Committee on Research for the Division of Surgery, Harvard Medical School.[1] Their main conclusion reads as follows:

> The value of the Riva-Rocci apparatus in determining the blood pressure in surgical patients is limited to a comparatively small number of cases. The conditions of cerebral compression and of surgical shock produce the most marked and definite alterations in the blood pressure. When these conditions are present and other confusing causes of alterations in the blood pressure are eliminated, the value of the blood pressure determinations, as an indication for or against operation, is increased. Under other circumstances, the value of these observations is at present not apparent. The adoption of blood pressure observations in surgical patients does not at present appear to be necessary as a routine measure.

On reading this conclusion, one is struck by the fact that the committee was able to discover decided and characteristic changes in the blood pressure only in those surgical conditions which presumably involve the very nerve centers that govern the cardiovascular mechanism. And the question, therefore, suggests itself: Does this fact serve to account for the generally unsatisfactory results obtained by the committee and by almost all other investigators who have worked in the field of clinical blood pressure? In part, I think, it does. All physiologists are agreed that there is at work in the animal organism a compensatory mechanism the main function of which is to maintain a sufficient circulation of blood in all organs, but particularly in those organs the functions of which are of immediate vital importance.[2] Through the interaction of the centers controlling the heart and the caliber of the smaller arteries, the force and rate of the heart beat and the resistance to the flow of blood through the peripheral vessels are so varied to suit varying conditions that the mean blood pressure, for instance, may be kept constant despite decided changes which may have occurred in both of the above-mentioned variable factors. It follows, therefore, that under such circumstances it may be impossible to recognize in the data afforded by blood pressure investigations as usually practiced, any change in the circulatory system until the disturbances in function have become so serious that the centers can no longer compensate them.

In this connection, it is necessary to call attention to the fact that in most investigations thus far made either one or the other of the determinable blood pressures, systolic or diastolic, has been followed, and usually it has been the systolic pressure. As a rule, it has been forgotten in such investigations that the pressure in the larger arteries varies through a wide range with each beat of the heart. With each contraction of the heart the pressure in the arteries rises rapidly to its maximum or systolic value, and during cardiac diastole the pressure in the arteries falls relatively slowly to its minimum or diastolic value.

1. "Report of the Committee on Research for the Division of Surgery," Harvard Medical School; "Blood-Pressure Observations in Surgical Cases," Boston Med. and Surg. Jour., 1904, vol. cl, p. 255.

2. Francois-Franck: "Defense de l'organisme contre les variations anormales de la pression arterielle," Acad. de Med., Paris, July 21, 1896.

Dawson[3] has recently published a report of an investigation of the blood pressures at different points of the arterial tree of the dog. The pressures were determined by means of valved mercury manometers connected directly with the arteries of the animal. He found in the carotid artery, for example, the pressures to be: systolic 162, diastolic 103, mean 122 mm. Hg. With each pulse wave, therefore, the pressure ranges through 59 mm. Hg. For the sake of convenience, this range of pressure with each pulse wave has been termed the pulse pressure. The pulse pressure is the difference between the systolic and diastolic pressures. In addition Dawson has shown, in confirmation of older investigators, that the mean and diastolic pressures are practically constant throughout the large arteries, and that the systolic pressure obtained from branches of the main arterial trunk falls off considerably as the smaller vessels are approached (Fig. 1).

Here special attention should be directed to the fact that the mean and diastolic pressures are practically constant in all of the larger arteries and that the diastolic is much nearer to the mean than is the systolic pressure. The practical significance of these relations of the pressures to one another becomes apparent when it is recalled that at present there is no known way of directly determining the mean blood pressure in man.

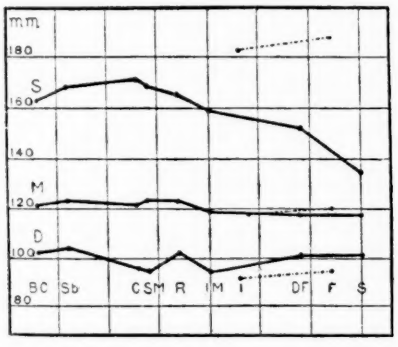

Fig. 1.—Aortico-femoral system, S, M and D are the systolic, mean and diastolic end pressures, respectively. The solid lines connect end pressures taken in side branches of the aortico-femoral trunk. Broken lines connect pressures taken in the main trunk of the system. B, C is the branchio-cephalic artery; Sb, left subclavian; C, celiac axis; S M, superior mesenteric; R, left renal; I M, inferior mesenteric; I, iliac; D F, deep femoral; F, femoral; S, saphenous (Dawson).

But it follows from the above-mentioned facts that the diastolic pressure is a much more accurate indicator of the mean than is the systolic.

At least four methods have been proposed for determining the systolic pressure in man, namely: 1. The method of obliteration,[4] compression or decompression of an artery until the pulse distal of the point of compression or decompression disappears or reappears, respectively. 2. The method of von Frey,[5] submersion of the arm in mercury and measurement of the distance from the surface of the mercury of the place in the arm where the subjective pulsation is the most intense. 3. The method of Gaertner,[6] the flushing of the finger tip, which previously has been made anemic, during decompression of the digital arteries. 4. The method of von Recklinghausen,[7] the first abrupt increase in amplitude of pulsations transmitted from the artery, during its decompression, to the object compressing the artery.

Many tests[8] have been made of the accuracy of estimations with the method of obliteration. The results obtained are by no means uniform, but the discrepancies are probably largely due to the fact that investigators in many instances are not sufficiently well acquainted with the subject of hemodynamics, with the theory of the manometers used for the direct measurement of the blood pressure. Furthermore, the peripheral pulse has been palpated, not recorded, in too small an artery. There is no need of discussing here how these facts have influenced the results obtained by different investigators. According to recent investigations it would appear that when the tests are made on the exposed arteries of animals the method of obliteration is found to be very accurate indeed.[9]

In animals when the artery is covered by surrounding tissue the estimation varies somewhat with the thickness of the tissue and with the width of the compressing cuff. But such animal experiments permit the assumption that fairly accurate estimations may be made in man. With cuffs of sufficient width the error need not be more than —4 mm. Hg.[10]

In this connection I wish to call attention to the test of the method of Vierordt, recently published by Mummery,[11] who states that "the accuracy of the readings (of the Riva-Rocci apparatus) has previously been tested by observations on the cadaver, . . . but this method of testing the instrument is very unsatisfactory and unreliable." He does not seem to know that tests of the method of Vierordt have been made on the living animal. And in the statement that the Riva-Rocci "apparatus registers the maximum systolic pressure" it is evident that Mummery is not acquainted with the meaning of the terms used.

Mummery's method of testing the instrument consists of making simultaneous readings with the ordinary mercury manometer in the right femoral artery and with the Riva-Rocci apparatus attached to the left thigh of a dog. With certain exceptions, which he explains to his own satisfaction, he finds that the readings made with the two instruments correspond very well indeed. He then implies that he has proved that the Riva-Rocci instrument registers the systolic pressure. It is not stated how his mercury manometer was read, whether at the crest of its swing or at its mean position; in either case, but especially in the latter, the readings made would be very far from the true arterial systolic pressure. Neither does Mummery state the width of the cuff used to apply the pressure to the thigh, nor does he seem to know that it is impossible to apply circular pressure to the thigh of the dog without having a large component of the

3. Dawson: "The Lateral Blood Pressures at Different Points of the Arterial Tree," Amer. Jour. of Physiol., 1906, vol. xv., p. 244.

4. v. Basch: "Ueber die Messung des Blutdrucks am Menschen," Ztschr. f. klin. Med., 1881, vol. ii, p. 79.

5. Chir. Beit. Fests. f. Benno Schmidt, Leipsig, 1896; ref. Sahli; "Lehrb. der klinischer untersuchungsmethoden." Second ed., 1899.

6. Gaertner: "Ueber einen neuen Blutdruckmesser (Tonometer)," Wien klin. Wochschr., 1899, No. 25, p. 696.

7. v. Recklinghausen: "Ueber Blutdruckmessung beim Menschen," Arch. f. exp. Path. u. Pharmak., 1901, vol. xlvi, p. 78.

8. Potain: "Determination experimentale de la valeur du sphygmomanometre," Arch. de Physiol., 1890, fifth series, vol. ii, p. 300.

9. Gumprecht: "Experimentelle und klinische Prüfung des Riva Roccischen Syphygmomanometers," Zschr. f. klin. Med., 1900, vol. xxxix, p. 377.

10. Erlanger: Proc. Amer. Physiol. Soc., Dec., 1903, p. 14; also, "A New Instrument for Determining the Minimum and Maximum Blood Pressures in Man," Johns Hopkins Hosp. Rep., 1904, vol. xii, p. 53.

11. Mummery: "Comparison of Blood-Pressure Readings Obtained Simultaneously With a Manometer and With a Sphygmomanometer," Proc. Physiol. Soc., Jour. of Physiol., 1905, vol. xxxii, p. 23; also "The Physiology and Treatment of Surgical Shock and Collapse," Lancet, 1905, vol. i, p. 696.

pressure lost in dragging the cuff toward the apex of the cone. These observations of Mummery are therefore valueless and misleading.

The accuracy of estimation made by the method of von Recklinghausen has been tested on the exposed artery of the dog, although not so carefully as is desirable. The method seems to be very accurate. Comparisons of estimations in man by the methods of von Recklinghausen and Vierordt indicate that with the latter method the estimations may be from 5 to 10 mm. Hg. too low.[10] The estimations made with the method of von Frey are too subjective to allow of satisfactory testing.

The method of Gaertner is open to the objection that the arteries of the fingers are probably small enough to participate directly in vasomotor changes.[12] Therefore a rise of the general blood pressure, which in part is caused by constriction of the digital arteries, may be associated with a fall of pressure in the terminal phalanges. That this does occur is practically demonstrated by the fact that cold, which usually causes peripheral constriction with consequent rise of the general blood pressure, seems to cause a fall of pressure as estimated by the method of Gaertner.[13]

There are two methods by means of which the diastolic pressure may be estimated in man. The older method, that of Marey, consists of determining the pressure under which the pulse will transmit oscillations of greatest amplitude to the object with which the pressure is being applied to the artery. Within the past ten years many opinions have been expressed as to which pressure, mean or minimum, is determined by this method. Within comparatively recent years, owing largely to the investigations of Howell and Brush,[12] the decision has been reached that the method of maximum oscillations determines the diastolic pressure. There seems to be but one investigator, von Recklinghausen, who now maintains that maximum oscillations are obtained at a mean pressure.[7] This opinion is based on the observation that if a tracing be made of the oscillations obtained from an artery while the pressure on it is slowly falling the largest oscillations will be obtained some time before an abrupt diminution in amplitude occurs. In such a case von Recklinghausen assumes, rightly, I believe, that the pressure on the artery was diastolic when the abrupt diminution in amplitude was registered, and that the maximum oscillations, therefore, were obtained while the pressure on the artery was above the intra-arterial diastolic pressure. But it can readily be shown that if the pressure on the artery be allowed to fall somewhat more slowly than in von Reckinghausen's experiments the maximum oscillations will be followed immediately by the abrupt diminution in amplitude.[10] The cause of the discrepancy which is seen when the pressure on the artery falls rapidly can not be discussed here. Let it suffice to state that, under any circumstances, the diastolic pressure corresponds with the abrupt diminution in amplitude.

The second method with which it has been proposed to determine the diastolic pressure in man depends on the observation that while gradually compressing an artery, at a certain pressure the pulse peripherally of the place of compression diminishes in amplitude. Janeway,[14] who first noted this phenomenon, did not feel justified in concluding that it permitted of the estimation of the diastolic pressure. He cautiously states that "the pressure to produce it must lie above the minimum pressure in the artery." Other investigators, among them Masing,[15] but particularly Strassberger[16] and Sahli,[17] maintain, on *a priori* grounds entirely, that the principle of Janeway gives diastolic pressures; but the proof is lacking that such is the case. It has been noted by Strassburger, and the same fact is illustrated in the tracings reproduced by Sahli, that the amplitude of the pulse wave increases before the diminution in amplitude occurs. Strassburger, therefore, estimates the diastolic pressure by noting the pressure at which the pulse waves of increasing amplitude first began to diminish, using for the compression of the artery the Riva-Rocci sphygmomanometer. The changes in amplitude of the radial pulse are noted with the finger. Sahli likewise employs the Riva-Rocci instrument to apply pressure to the brachial artery, but he records the changes in the radial pulse with the Jaquet sphygmochronograph. As stated above, it is assumed that the pressure exerted on the brachial artery is diastolic when the pulse diminishes in amplitude.

It would be a relatively simple matter to test the accuracy of this assumption on the living animal, but, to my knowledge, no such tests have yet been made. In the absence of such tests it becomes necessary to call attention to the fact that there are obviously two processes at work tending to alter the amplitude of the peripheral pulse while the artery is being compressed. First, by some unknown factor tends to enlarge the pulse amplitude; second, by the pressure from without must constantly tend to diminish the amplitude of the peripheral pulse by diminishing the caliber of the artery. It is true that the latter factor will not be great so long as the external pressure is less than the intra-arterial minimum; the great diminution in caliber will occur when the diastolic pressure is exceeded. There is no justification for Sahli's assumption that the arteries suffer no lateral expansion with the advent of the pulse wave and that, therefore, the caliber of the artery is not diminished by external pressure until that pressure exceeds the diastolic.

Since, then, there are two factors altering the amplitude of the peripheral pulse in opposite directions, any *a priori* conclusion as to the value of the pressure determined by the method of Janeway must necessarily be questionable. It is true that comparisons have been made of estimations of the blood pressure determined by the methods of Marey and of Janeway. But, unfortunately, the results obtained by two investigators do not agree. Thus Janeway states that the pressure at which the pulse waves as recorded with the sphygmograph diminish in amplitude "always lies above the lower limit of maximal pulsation, as shown by the Hill-Barnard[14] sphygmometer." Whereas Brush[18] found that the diminution in the amplitude of the peripheral pulse, as determined by palpation, corresponds fairly closely with the diastolic pressure as determined with my instrument. It is to be regretted that the latter investigator did not employ a more objective method of studying the variations in the peripheral pulse.

12. Howell and Brush: "Critical Note on Clinical Methods of Measuring Blood Pressure," Trans. Mass. Med. Soc., June 12, 1901.
13. Raab: Münch. med. Wochschr., 1905, No. 50.
14. Janeway: "Observations on the Estimation of Blood Pressure in Man," New York Bull. of Med. Sc., 1901, vol. i, p. 105.
15. Masing: "Ueber das Verhalten des Blutdrucks der jungen und der bejahrten Menschen bei Muskelarbeit," Deuts. Arch. f. klin. Med., 1902, vol. lxxiv, p. 253.
16. Strassberger: "Ein Verfahren zur Messung des diastolischen Blutdrucks und seine Bedeutung für die Klinik," Zeitschr. f. klin. Med., 1904, vol. liv, p. 373.
17. Sahli: "Ueber das absolute Sphygmogramm und seine klinische Bedeutung," Deuts. Arch. f. klin. Med., 1904, vol. lxxxi, p. 493.
18. Brush: Amer. Med., July 15, 1905, p. 97.

The question now arises: Does the knowledge of either one of the determinable blood pressures (systolic and diastolic) suffice in physiologic and clinical observations or are the advantages which may be gained from the knowledge of both pressures so great as to demand their estimation in all cases?

There is no doubt that the diastolic pressure gives the better clue to the driving force of the blood stream, i. e., the geometric mean of the blood pressure. This is indicated by the fact that the diastolic pressure lies much nearer to the mean, and follows its variations much more accurately than does the systolic. When, therefore, it is desired to know the mean pressure approximately, the diastolic pressure should be determined. If, on the other hand, it is desired to know the strain to which the arteries are subjected, then must the systolic pressure be determined. But there are some reasons for believing that a change in the mean pressure may occur without affecting one or the other of the determinable pressure and, conversely, that the diastolic and systolic pressures may change without there being any corresponding change in the mean.[12] Also it can be shown that both the systolic and diastolic pressures must be known in such and similar cases in order that the nature of the change in the circulation may be determined.

In this connection, it was first suggested by the author[19] that, under more or less normal conditions, it should be possible to determine changes in the relative velocity of blood flow in the aorta, and the factors determining such changes, from a knowledge of the associated changes in the pulse pressure (the difference between the systolic and diastolic pressures), the blood pressure (diastolic) and the pulse rate. The argument, which was almost entirely *a priori,* was briefly as follows: In a constant circulatory system the heart will pump blood into the arteries until an arterial pressure is produced which is sufficiently great to force out of the arteries, against the peripheral resistance, an amount of blood equal to that which is thrown into the arteries. At the end of each cardiac cycle the pressure in the arteries will be at its lowest or diastolic level. With each cardiac systole the pressure in the root of the aorta will rise rapidly to its maximum or systolic value. Other things being equal, the difference between the systolic and diastolic pressures, i. e., the pulse pressure, should vary with the amount of blood thrown out by the heart with each beat. When the mean blood pressure is constant an equivalent of the amount of blood which is thrown out by the heart during systole must escape from the arteries into the veins during diastole. In the pulse pressure, therefore, we have a measure of the systolic output of the heart. This systolic output, or rather the pulse pressure caused by it, when multiplied by the pulse rate per minute should give the relative velocity of blood flow in the aorta. Since it has been shown that the methods employed for estimating the blood pressures in the brachial artery of man determine the lateral pulse pressure in the aorta,[3] we have at hand the means of determining the relative velocity of blood flow in man. It is necessary to bear in mind in this connection that there are many factors, whose values are still unknown, which may operate to vitiate the value of the pulse pressure as an index to the relative velocity of flow. Among such factors the following may be found to be of importance: the capacity of the arterial system, the rigidity of the arterial walls which may vary with the arterial pressure and degenerative changes, the rate of systolic output, the superposition of secondary on primary waves, etc.

Sahli[17] discussed this phase of the blood-pressure problem and independently arrived at the conclusion, in which he was opposed by Strassberger,[20] that the pulse pressure is valueless as an index to the velocity of blood flow. It should be stated that Sahli seems to have had in mind the possible value of the pulse pressure in pathologic conditions only, and, in the absence of experimental data, his conclusion in this regard seems to be justifiable. Nevertheless, it is possible to collect from the physiologic literature facts which indicate that a distinct association exists between pulse pressure and systolic output. Therefore, it seems reasonable to maintain that in physiologic conditions, at least, the products of the pulse rate by the pulse pressure in the same subject vary with the velocity of blood flow.

By way of illustration of the value of this assumption a few observations made in man will be given.[19] An average of many observations in man shows that with the assumption of the erect from the recumbent posture the systolic pressure suffers practically no alteration, whereas the diastolic pressure rises; the pulse pressure, therefore, becomes smaller. The pulse rate is faster with the individual in the standing position, and it results that the product of the pulse rate by the pulse pressure is practically the same in both positions. It certainly seems probable that the compensatory mechanism would strive to maintain the same velocity of blood flow when the body is in two normal positions, and the fact that the product of the pulse rate by the pulse pressure is identical in the two positions of the body may be taken as proof that the compensation is perfect. It should be noted in connection with this experiment that if only systolic pressure estimations had been made, the erroneous conclusion would have been reached that the blood pressure is not changed by alterations in the position of the body.

As a second illustration, we may choose the effect on the pressures of immersing the body in the erect position in warm and in cold water. When the body is in warm water, the diastolic pressure is high, but, the systolic pressure being relatively higher than the diastolic, the pulse pressure is large. At the same time, the pulse rate may be more rapid than that of the normal standing position. The product of the pulse rate by the pulse pressure is, therefore, remarkably large, indicating a high velocity of blood flow. When the body is immersed in cold water, the diastolic pressure, as in the former case, is high, but since the systolic pressure does not increase to the same extent as the diastolic, the pulse pressure is relatively small. The pulse rate may be slow. The product of the pulse pressure by the pulse rate is, therefore, small, indicating a low velocity of blood flow. It will be noted that in both parts of this experiment the blood pressure was increased over the normal by immersion in water. But the effect of the warm water was, as we should expect, to increase the velocity of blood flow, whereas the effect of the cold water was to diminish the velocity of flow.

It should not be necessary to make any further comments on the value of simultaneous estimations of the systolic and diastolic pressures. Their values, or, rather, the necessity of making them in all cases, can be read in the brief accounts of the experiments quoted above.

19. Erlanger and Hooker: Proc. Amer. Physiol. Soc., Dec., 1903, p. 15; also, "An Experimental Study of Blood Pressure and Pulse Pressure in Man," Johns Hopkins Hosp. Rep., 1904, vol. xii, p. 145.

20. Strassberger: "Ueber Blutdruck, Gefässtonus und Herzaebeit bei Wasserbäden verschiedener Temperature," Deuts. Arch. f. klin. Med., 1905, vol. lxxxii, p. 459.

The pulse pressure may prove to be of value in still another connection. Mall and Welch,[21] in an experimental study of infarct formation in the intestine, have shown that diapedesis of the red blood corpuscles occurs when the blood flow through an artery is cut down to such a point that lateral pulsations of the walls of the peripheral arteries can no longer be seen. In the same connection, Hamel[22] and Kronecker[23] have shown that the edema, which is so apt to develop in artificially perfused organs, may be largely obviated by perfusing with a fluid driven by a pulsating pressure. The absence of pulsation, therefore, seems to favor extravasation of blood through the blood vessels into the tissues.

It has been shown that this property of the pulse pressure is probably of considerable significance in man. For example, the amount and composition of the urine seems to vary with the pulse pressure; and, in a case of orthostatic albuminuria, the output of albumin was found to bear a very distinct relation to the magnitude of the pulse pressure; albumin appearing or increasing in amount in association with diminution of the pulse pressure and diminishing or disappearing with increase of the pulse pressure.[19]

Before leaving the subject of blood pressure, attention should be directed to the relation which it bears to Cheyne-Stokes respiration, since an important contribution to this association has recently been made by Eyster.[24] This investigator recognized at least two forms of Cheyne-Stokes respiration, one associated with increased intracranial tension, the other occurring in association with arteriosclerosis, myocarditis, nephritis, etc.

In regard to the first form of Cheyne-Stokes respiration, it has long been known from experiments on animals that, when the intracranial tension is high, the blood pressure is apt to vary in the form of long regular waves, the so-called Traube-Hering waves. It has also been noted that at such times the respirations often become periodic. Hill[25] noted that the respirations, i. e., the periods of hyperpnea, occur during the ascending limbs of the Traube-Hering waves, the apneic periods while the pressure is falling. In one clinical case Hill was able to show by means of the plethysmograph that dilation of the vessels of the arm and hand occurs during the period of apnea and constriction with dyspnea. In other words, he has obtained rather indirect evidence that in man the same changes in blood pressure are associated with periodic respirations as in the dog.

Cushing[26] first showed clearly that when, in the dog, the intracranial pressure exceeds the blood pressure, there seems to occur an increase in the activity of the vasoconstrictor center and that this results in a rise of the blood pressure until, in favorable cases, it exceeds the intracranial pressure, when the brain, which had previously been anemic, receives a supply of blood. In certain cases this increased activity of the vasoconstrictor center seems to endure for but a relatively short period; with its fatigue, perhaps, the blood pressure falls, the brain again becomes anemic, and again the anemia stimulates the vasoconstrictor center. In this way the periodic waves of blood pressure seem to be produced. When, with the fall of blood pressure the brain becomes anemic, the respirations cease; they begin again when the brain receives blood. It would, therefore, appear that the periodic respiration seen in conditions of increased intracranial tension results from these alternating periods of ischemia and flushing of the brain. But the conditions are not so simple as stated. Eyster[24] points out that it is necessary to take into account the general irritability of the respiratory center. This phase of the question does not concern us here. Cushing was able to show in two cases of increased intracranial tension with Cheyne-Stokes respiration in man that the periods of hyperpnea are coincident with rises of the systolic pressure, the apneic periods, with falls.[27]

These determinations can not be considered conclusive, since we have seen that the systolic pressure may vary independently of the mean and diastolic pressures. Eyster has demonstrated beyond doubt, however, that in man a rise of blood pressure precedes, or is coincident with, the beginning of the period of hyperpnea. The method employed by Eyster for this purpose deserves a word of mention. Using the author's sphygmomanometer, Eyster first determined the systolic and diastolic pressure. The instrument was then set at a pressure midway between the determined pressures and a record was made on a revolving drum of the pulsations obtained in this way. Such pulsations are, of course, intermediate in size between those obtained at systolic and diastolic pressure. It was stated above that maximum oscillations are obtained at diastolic pressure. If, therefore, the pressure in the artery should rise, the oscillations would increase in amplitude, since the diastolic pressure would then be closer to the pressure in the instrument; and, *vice versa*, should the diastolic pressure fall, the recorded oscillations would diminish in amplitude, since the diastolic pressure would then have receded from the pressure at which the instrument had been set. This method of studying oscillations in the blood pressure, which are too rapid to be followed by methods generally employed, was first used by Mosso[28] and later by myself.[29]

It was also with the aid of this method that Eyster was enabled to recognize a second type of Cheyne-Stokes respiration associated with periodic changes in the blood pressure. He found that when Cheyne-Stokes respiration is met with in other conditions then increased intracranial tension, the hyperpnea occurs while the blood pressure is falling. Eyster does not attempt to suggest an explanation of this association, but it is implied that there exists a permanently low state of irritability of the respiratory center and that the center, therefore, requires an abnormally strong stimulus to arouse it into activity. This strong stimulus presumably is supplied by the accumulation of waste products in the center when, through the fall of the blood pressure, the irrigation of the center becomes insufficient. This inference is supported by the fact that carbon dioxid, administered toward the end of the period of hyperpnea, has, in one

21. Mall and Welch (Quoted by Welch): "Thrombosis and Embolism," Allbutt's "System of Medicine," 1899, p. 254.
22. Hamel: "Die Bedeutung des Pulses für den Blutstrom," Ztschr. f. Biol., 1889, vol. xxv, p. 474.
23. Kronecker: "Importanza del Polso per la Circolazione del Sangue," Atti della R. Acc. dei Lincei, 1889, p. 270, ref., Centbl. f. Physiol.
24. Eyster: To appear in Jour. of Exp. Med.
25. Hill. "Cerebral Circulation," Lond., 1896.
26. Cushing: "Concerning a Definite Regulatory Mechanism of the Vasomotor and Center Which Controls Blood Pressure During Cerebral Compression," Johns Hopkins Hosp. Bull., 1901, vol. xii, p. 290.
27. Cushing: "The Blood Pressure Reaction of Acute Cerebral Compression," Amer. Jour. of Med. Sc., 1903, vol. cxxv, p. 1017.
28. Mosso: "Sphygmomanometre pour mesurer le pression du sang chez l'homme," Arch. it. de Biol., 1895, vol. xxiii, p. 177.
29. Erlanger: "The Physiology of Heart Block in Mammals, With Especial Reference to the Causation of Stokes-Adams Disease," Jour. of Exp. Med., 1905, vol. vii, p. 676.

case of this type of Cheyne-Stokes respiration, promptly abolished any tendency to apnea.[30]

PHYSIOLOGY OF THE HEART.

Within recent years many new researches into the cause of the heart beat have been undertaken. Indeed, this subject seems to have been attacked by the physiologist with renewed vigor.

One of the most remarkable phenomena which this activity has brought to light is the astounding longevity of the mammalian heart after the death of the organism. To Martin belongs the credit of having first demonstrated the fact that the heart of the dog may be kept beating if the coronary circulation be maintained by driving defibrinated blood through the aorta toward the heart.[31] In these experiments the blood was aërated by passage through the animal's lungs. Some years later Langendorff simplified the process somewhat in that the blood was aërated by exposure to an atmosphere of pure oxygen instead of being passed through the lungs.[32] Still more recently, it was discovered that, as was known to be the case with the cold-blooded heart, the salts of the blood, not its complex constituents, are of prime importance in originating and maintaining the beat of the mammalian heart.[33] It was found that a solution containing sodium chlorid, potassium chlorid, calcium chlorid, approximately in the proportions in which they occur in the blood, when perfused through the isolated heart, will cause it to beat. In 1901, Locke determined the solution best suited to prolonged activity of the isolated heart.[34] Such a solution contains, beside the above-mentioned salts, sodium bicarbonate, dextrose and oxygen. With this solution Locke has recently succeeded in maintaining the beat of the rabbit's heart, with some interruptions, for five days,[35] and other investigators have succeeded in reviving the hearts of mammals, including man, many hours after death of the organism. Usually in these latter experiments the dead animal or the excised heart is put on ice until the attempt is made to revive the heart by artificial perfusion of the coronary system. In this way Kuliabko[36] has revived a part of the heart seven days after the death of the organism. The monkey's heart has been revived almost fifty-four hours after death.[37] It has been found possible to revive the hearts of children dead of disease. Thus Kuliabko succeeded in causing the heart of a child to beat twenty hours after death from pneumonia.[36]

It is interesting to note that the pioneers in this field of research entered on experiments with fear and anxiety; the preparations were made with almost funereal solemnity. Now these experiments are among the easiest the physiologist has to perform. As an example of this it may be stated that one experimentor,[37] instead of making all preliminary dissections on the living animal, with the confidence born of experience, boldly kills the animal, eviscerates it, dissects out the cardiac nerves, and, then only, begins to perfuse the heart.

The only difficulty experienced in reviving the mammalian heart consists in the tendency which it sometimes displays to go into so-called fibrillary contractions instead of beginning to beat coördinately. No satisfactory explanation of the cause of this phenomenon has yet been suggested. Fibrillation, once begun, is apt to persist with the greatest of obstinacy. Indeed, not so many years ago, some investigators went so far as to deny the possibility of reëstablishing coördinated contractions in a ventricle which has once fibrillated. Recently Hering discovered that if the fibrillating heart be brought to rest by perfusing it for a short while with a 1 per cent. solution of potassium chlorid, on subsequent perfusion with Ringer's solution, the heart will beat coördinately.[38] In the same connection it has been shown by Seligmann that camphor will cause a fibrillating heart to beat coördinately.[39] After the injection of camphor, strong stimulation of the ventricles may cause them to fibrillate, but this fibrillation always ceases with the cessation of the stimulation,[40] whereas, in the absence of camphor, the fibrillation usually continues until all movements of the heart cease. It should be added, however, that the last investigator in this field maintains that camphor has absolutely no influence over fibrillary contractions.[41]

During the last few years the controversy between the neurogenists and the myogenists has been waged with renewed vigor, and consequently many facts have been gathered, some of which favor the view that the mechanism which determines the beat of the heart is nervous; others, the view that the impulse which causes the heart to beat arises in, and is conducted through, the myocardium. This controversy has recently been reviewed by Howell with his characteristic clearness.[42] Only one phase of this question, namely, that dealing with the path of conduction of impulses from auricles to ventricles in the mammalian heart will, therefore, be considered here. This subject has been chosen for consideration, because it has served to elucidate some hitherto obscure pathologic phenomena noted in the human being.

The theory of myogenic origin and muscular conduction of the impulse which causes the heart to beat assumes that the impulse arises in the musculature in the region of the mouths of the great veins and is transmitted from this place through muscle to the arterial end of the heart. The successive regions of the heart, therefore, contract from above downward.

Thus, as is well known, there is a perceptible interval between the contraction of the auricles and the contraction of the ventricles. Some evidence has been obtained that in the mammalian heart the impulse arises in the region which lies between the mouths of the two venæ cavæ.[43] At least this is the only region the warming or

30. Pembrey, Beddard and French: "Observations on Two Cases of Cheyne-Stokes' Respiration," Proc. Physiol. Soc., Jour. of Physiol. 1906, vol. xxxiv, p. 6.

31. Martin: "A New Method of Studying the Mammalian Heart," Stud. from the Biol. Lab., Johns Hopkins Univ., 1882, vol. ii, p. 119.

32. Langendorff: "Untersuchungen am überlebenden Säugethierherzen," Pflüg. Arch., 1895, vol. lxi, p. 291.

33. Rusch: "Experimentelle Studien über die Ernährung des isolirten Säugethierherzens," Pflüg. Arch. 1898, vol. lxxiii, p. 535.

34. Locke: "Die Wirkung der Metalle des Blutplasmas und verschiedener Zucker a. d. isollerten Säugethierherz," Centbl. f. Physiol. 1901, vol. xv, p. 490.

35. Locke and Rosenheim: "Notiz über die Ueberlebensdauer des isollerten Säugethierherzens," Centbl. f. Physiol., 1905, vol. xix, p. 737.

36. Kuliabko: "Weitere Studien über die Wiederbelebung des Herzens," Pflüg. Arch., 1903, vol. xcvii, p. 539.

37. Hering: "Uber die Wirksamkeit der Nerven auf dem Tode wiederbelebte Säugethierherz," Pflüg. Arch., 1903, vol. xcix, p. 245.

38. Hering: "Ueber die Wirksamkeit des Accelerans auf die von den Vorhöfen abgetrennten Kammern isolirter Säugethierherzen," Centbl. f. Physiol., 1903, vol. xvii, p. 1.

39. Seligmann: "Zur Kreislaufswirkung des Camphers," Arch. f. exp. Path. u. Pharmak., 1905, vol. lii, p. 333.

40. Gottlieb: "Zur Herzwirkung des Kamphers," Ztschr. f. exp. Path. u. Therap., 1905, vol. ii, p. 385.

41. Winterberg: "Ueber Herzflimmern und seine Beeinflussung durch Kampher," Ztsch. f. exp. Path. u. Therap.

42. Howell: Harvey Lecture, "The Cause of the Heart Beat," THE JOURNAL A. M. A., June 2 and 9, 1906, pages 1665 and 1749.

43. McWilliam: "The Rhythm of the Mammalian Heart," Jour. of Physiol., 1888, vol. ix, p. 167.

cooling of which alters the rate of the whole heart.[44] From this region, therefore, the impulse must spread through the auricles into the ventricles. If this impulse spreads through muscle, then there must be a muscular connection between auricles and ventricles.

The existence of such a connection was for many years denied by anatomists and by some physiologists. In 1893 Kent[45] stated that such a connection exists, although he did not exactly localize it. Indeed, it has been said that Kent's methods did not suffice to demonstrate the presence of muscle fibers.[46] In the same year His, Jr.,[47] exactly localized a definite muscular bundle connecting the septum of the auricles with the septum of the ventricles. Practically no notice was taken of this work until 1904, when the existence of this bundle was confirmed and its exact anatomy described by Retzer,[46] Braeunig[48] and Humblet.[49] In 1905, Tawara[50] described its minute anatomy. This investigator believes that the auriculoventricular bundle of His consists of a tissue which differs microscopically from the rest of the heart muscle. He thinks it is composed of so-called Purkinji fibers and that it is a part of the Purkinji system of fibers which ramifies through the heart muscle. In a general way it may be said that the auriculoventricular bundle begins in the septum of the auricles immediately below the foramen ovale and from this place passes downward and forward through the auriculoventricular junction where it comes into close relation with the auriculoventricular valves. Arrived in the septum of the ventricles, it courses downward and forward over the upper edge of the muscular septum between it and the membranous septum. According to Tawara, it here divides, one part passing down the right side of the septum, the other down the left side. According to Retzer, the dimensions of the auriculoventricular bundle in man are 18 mm. in length, 2.5 mm. in breadth and 1.5 mm. in thickness.

If this muscular bundle constitutes the functional connection between auricles and ventricles, destruction of it should block the passage of the auricular impulse into the ventricles. Whether or not the ventricles will then stop beating will depend on the degree to which their inherent rhythmicity is developed. If, as is the case with the cold-blooded heart, they are not spontaneously rhythmical under what might be termed normal conditions, then they should cease to beat when complete block is produced; but if they are spontaneously rhythmical, they should continue to beat, but with a rhythm totally independent of that of the auricles. It might here be stated that it has long been known that the mammalian ventricles possess the property of spontaneous rhythmicity. This was first demonstrated by the experiments of Wooldridge,[51] and subsequently by those of other investigators,[52] in which the functional connection between auricles and ventricles was severed by crushing all of the tissue in the auriculoventricular junction.[53] Under these circumstances, the ventricles continue to beat, but with a rate which is much slower than that of the auricles and with a totally independent rhythm. That the same phenomenon may be elicited by destruction of the auriculoventricular bundle alone was first demonstrated by His, Jr., in 1895.[54] In a very brief report of his experiments, His states that section of the auriculoventricular bundle in rabbits causes the ventricles to beat indpendently of, and much more slowly than, the auricles.

His's observations did not receive the recognition they deserved, probably owing to the fact that only a preliminary report of them was made. The recent anatomic work on the auriculoventricular bundle has served to stimulate further investigations into the physiology of the bundle. In 1904, Humblet repeated His's experiment on the excised perfused heart of the dog and apparently obtained the same result.[49] In a much more convincing way Hering, in 1905, showed that section of the auriculoventricular bundle causes complete independence of the auricles and ventricles.[55] In these experiments, as in those of Humblet's, the isolated perfused heart was employed.

My experiments on heart block in the dog were performed simultaneously with those of Hering.[56] The method employed differed from that of other investigators in that, instead of cutting the bundle in the perfused heart, it was compressed in a specially devised clamp with the heart preserving its normal relations to the organism.

The method used for compressing the auriculoventricular bundle can not be described here. With gradual compression of this bundle the following phenomena may be noted: First, may be seen a slight increase in the interval between the beginning of an auricular and the beginning of its independent ventricular contraction. This, then, is the first sign of heart block. It has been described in the human being by Weckebach,[57] Mackenzie[58] and Rihl.[59] With further clamping a degree of compression may be reached in which this interval—the intersystolic period—gradually increases in length with successive beats until eventually the ventricles fail to respond to one of the auricular impulses. Following this ventricular silence, the intersystolic period is short, but it immediately begins to lengthen again until another ventricular beat is dropped. In this way states may be produced in which a ventricular beat may be dropped quite regularly in 10, 9 or 8, etc., auricular beats. This condition, too, has been seen in the

44. Adam: "Experimentelle Untersuchungen über den Ausgangspunkt der automatischen Herzreize beim Warmblüter," Pflüg. Arch. 1906, vol. cxi, p. 607.

45. Kent: "Researches on the Structure and Function of the Mammalian Heart," Jour. of Physiol., 1893, vol. xiv, p. 233.

46. Retzer: "Ueber die musculöse Verbindung zwischen vorhof und ventrikel les Säugethierherzens," Arch. f. Anat., 1904, p. 1.

47. His, Jr.: "Arbeiten aus der med. Klinik zu Leipzig," 1903, ref. Retzer, (46).

48. Braeunig: "Ueber muculöse Verbindungen zwischen Vorkemmer und Kammer bei verschiedenen Wirbelthierherzen," Arch. f. Physiol., 1904, suppl. 1.

49. Humblet: "Le Faisceau inter-auriculo-ventriculaire constitue le lien physiologique entre les oriellettes et les ventricules du cœur du chien." Arch. inter. d. physiol., 1904, vol. i, p. 278; also, "Allorhythm cardiaque par section du faisceau de His," Ibid, 1906, vol. iii, p. 330.

50. Tawara: "Die Topographie und Histologie der Brückenfasern," Centbl. f. Physiol., 1905, vol. xix, pp. 70 and 298.

51. Wooldridge: "Ueber die Function der Kammernerven des Säugethierherzens," Arch. f. Physiol., 1883, p. 522.

52. Tigersredt: "Ueber die Bedutung der Vorhöfe für die Rhythmik der Ventrikel des Saugethierzens," Arch. f. Physiol., 1884, p. 497.

53. Krehl and Romberg: "Ueber die Bedeutung des Herzmuskels und der Herzganglien für die Herzthätigkeit des Säugethierzens," Arch. f. exp. Path. u. Pharmak., 1892, vol. xxx, p. 49.

54. His, Jr.: "Dritte intern. Physiol. Congress in Bern," Centbl. f. Physiol., 1895, vol. ix, p. 469.

55. Hering: "Ueber die Erregungsleitung zwischen Vorkammer und Kammer des Säugethierherzens," Pflüg. Arch., 1905, vol. cvii, p. 97.

56. Erlanger: "Vorläufige Mittellung über die Physiologie des Herzblocks in Säugethieren," Centbl. f. Physiol., 1905, vol. xix, p. 9; also, "Physiology of Heart Block in Mammals With Especial Reference to the Causation of Stokes-Adams Disease," Jour. Exp. Med., 1906, vol. viii, p. 8.

57. Wenckebach: "Die Arhythmie als Ausdurck bestimmter Functions-störungen des Herzens," Leipsic, 1903.

58. MacKenzie: "New Methods of Studying Affections of the Heart," Brit. Med. Jour., March and April, 1905.

59. Rihl: "Analyse von fünf Fällen von Ueberleitungsstörungen," Zeits. f. exp. Path. u. Therap., 1905-6, vol. ii, p. 82.

human being. With further clamping, more advanced stages of partial block may be obtained, stages in which only every other, or every third, or every fourth auricular beat may stimulate the ventricles, giving rise to what are generally termed 2:1, 3:1, 4:1, etc., rhythms, respectively. Usually, however, the ventricular period, when the ventricles are beating independently of the auricles, is shorter than the time occupied by four auricular beats, so that, should the third auricular beat fail to stimulate the ventricles, the latter may contract spontaneously. It is evident, therefore, that the ventricles may beat independently of the auricles, although the block is not actually complete. This state has been termed relative complete block.[60] Finally, when the pressure on the auriculoventricular bundle becomes such that the auricular impulse fails to pass the obstruction, the block becomes absolutely complete. In both forms of complete block the ventricles beat more slowly than the auricles and independently of them. This state of affairs is seen in advanced stages of Stokes-Adams disease.

When the block is produced slowly, in the manner described above, the ventricles begin their independent beats with a perfectly constant rate at the moment the block becomes complete; but when the block is established more or less suddenly the ventricles may cease beating for a variable interval of time—it may be as long as seventy seconds—when they may begin to beat, slowly at first, but with a gradually increasing rate until that usually seen in complete heart block obtains.[38, 60]. Naturally, the normal rate of the auricles is not affected during such periods of stoppage of the ventricles, except, secondarily, through the ischemia resulting from the cessation of the circulation. It is assumed that the ventricles stop beating in this experiment, when they are suddenly removed from the propelling action of the auricular impulses, because the inherent rhythmicity of the ventricles is dormant while the ventricles are being driven by the auricles; but when the auricular impulses suddenly fail to reach the ventricles the latter cease beating until their inherent rhythmicity develops to the stage at which the ventricles will begin to beat spontaneously.

These facts relating to heart block, as well as others to be given below, can best be explained by fitting them into a theory which may be represented diagrammatically as in Figure 2. It might be added that this theory is supported by many facts which can not be given here.[61] The upper line of the diagram represents the contractions of the auricles (A1, A2, etc.) and ventricles (V1, V2, etc.), the lower line the changes in irritability of the ventricles, the line 0 marking the non-irritable level. As is well known, the irritability of heart muscle falls to zero, that is, the tissue will not respond to stimuli of any strength, during the phase of contraction. During relaxation the irritability returns, increasing presumably rapidly at first and then more and more slowly until the tissue again contracts. With each contraction of the auricles a wave of excitation descends into the ventricles; this impulse is represented diagrammatically by the lines marked a b, the lengths of which have been chosen so as to vary with the strengths of the impulses which presumably reach the ventricles. It is assumed that the ventricles will contract when the auricular impulse as represented by this line acts as an efficient stimulus, i. e., when it intersects the curve of irritability of the ventricles.

After completion of the second ventricular cycle in the diagram, the clamp on the auriculoventricular bundle is gradually tightened. With this the impulse diminishes in strength, but it is still efficient. But in the fourth cycle the line representing the strength of the auricular impulse fails to meet the curve of irritability of the ventricles. The ventricles, therefore, fail to contract and their irritability, instead of falling to zero, continues to increase. The next auricular impulse is no stronger than was the preceding one, but at the time of its advent in the ventricles their irritability has increased to such a level that the impulse is efficient and the ventricles respond with contraction. At this stage we have a partial block of the 2:1 type. In the same way 3:1 and higher rhythms may be obtained. The block becomes relatively complete when the auricular impulses fail to stimulate the ventricles before the ventricles begin to beat as a result of the development of their inherent rhythmical power, and the block becomes absolute when the auricular impulse fails to get into the ventricles.

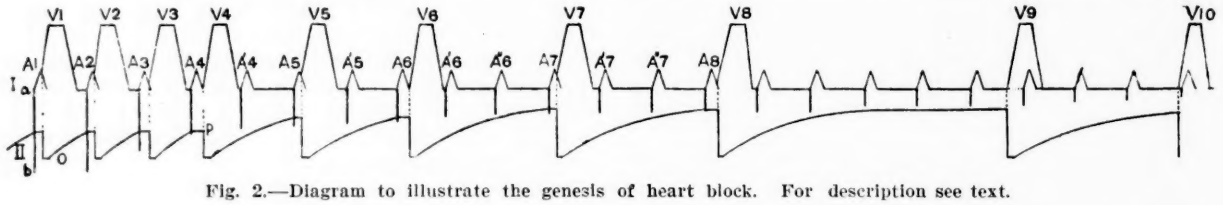

Fig. 2.—Diagram to illustrate the genesis of heart block. For description see text.

It has been shown experimentally that if, while the block is partial or relatively complete, the rate of the auricles be slowed by any means (e. g., by stimulation of the vagus nerve), the block may become less complete, that if the ventricle rate be increased during partial block (by stimulation of the accelerator nerve, for example), the block may become more complete. Indeed, it may actually become complete, and in such a case the ventricles may cease beating until their dormant rhythmicity awakens. [60, 61]. A glance at the diaphragm will serve to make clear the probable mechanism of these phenomena. It is justifiable to assume that the strength of the auricular impulses varies inversely as the auricular rate. It is conceivable, therefore, that if the rate of the auricles be sufficiently increased while the rhythm is, for example, 2:1, the auricular impulses thus weakened may fall short of being efficient stimuli. The rhythm then may become 3:1 or the block may become complete. Naturally, diminishing the auricular rate will have the opposite effect.

Since it has been found possible to produce heart block in other ways than by destruction of all the tissue in the auriculoventricular junction, i. e., by destroying the auriculoventricular bundle only, the way has been opened to the direct solution of the question:

60. Erlanger and Hirschfelder: "Further Studies on the Physiology of Heart Block in Mammals," Amer. Jour. of Physiol., 1903, vol. xv, p. 153.

61. Erlanger: "The Effects of Extra Systoles on the Dog's Heart and on Strips of Terrapin's Ventricle in the Various Stages of Block," Amer. Jour. of Physiol., 1906, vol. xvi, p. 160.

Do the vagus and accelerator nerves act on both the auricles and the ventricles? In relation to this problem it has been found that in complete heart block produced by destruction of the auriculoventricular bundle the normal influence of the vagus over the auricles is preserved, whereas, in the dog, at least, its influence over the ventricles is lost or almost completely lost.[56, 62] Thus stimulation of the vagus in such a case may stop the auricles, but the ventricles will continue to beat with practically unchanged rate. It follows from this observation, and others which can not be given here, that the prolonged[60] stoppage of the ventricles which may be obtained by stimulation of the vagus in the normal animal must be due to the fact that the vagus stops the auricles, and the ventricles, therefore, stop until their inherent rhythmicity develops to the point at which they begin to beat spontaneously.[60]

It might be added that the vagus likewise does not act on the ventricles of man, since in cases of complete heart block atropin does not increase the ventricular rate, although it exercises the usual accelerating effect over the auricles. It has long been known that in cases of Stokes-Adams disease (heart block) the pulse rate is remarkably stable. For example, changes in posture have not the usual effect on the pulse rate.[29] This observation is explained by the fact that in such cases the ventricles are not affected by vagus influences.

The accelerator nerves act directly on auricles and ventricles: stimulation of these nerves during complete heart block causes independent accelerations of auricles and ventricles [56, 60, 62]. And direct evidence obtained from a case of heart block indicates that in man, too, the accelerators act on auricles and ventricles.[29]

From these observations it follows that simultaneous stimulation of inhibitory and accelerator fibers might slow the auricles while accelerating the ventricles. This actually does occur in the dog, and there seems to be some grounds for believing that it would likewise occur in man. The evidence for this opinion follows. In advanced cases of Stokes-Adams disease with complete heart block, it has been observed that mild syncopal attacks may occur in association with Cheyne-Stokes respiration.[29, 63] This has also been seen in an instance of complete heart block experimentally produced in the dog.[64] In such cases in association with the onset of the period of hyperpnea, acceleration of the auricles and marked retardation of the ventricles may occur. In the present state of our knowledge, these changes in the rates of auricles and ventricles can be explained only on the assumption that they are caused by a simultaneous diminution in the tone of the vagus and accelerator centers in the medulla. The auricles, which are influenced mainly by the vagus, would then beat faster, whereas the ventricles, which are influenced by the accelerators only, would beat more slowly.

There seems to be still another way in which the syncopal attacks of Stokes-Adams disease might be caused, namely, by a sudden increase of the auricular rate while the block is partial. It was stated above that in the dog the block may under such circumstances become complete and that the ventricles may then stop beating until their inherent rhythmicity develops. It is this marked slowing of the ventricles which directly causes the syncopal attacks.[29, 65]

Thus far reference has been made only to heart block resulting from obstruction to the passage of impulses from auricles to ventricles. It is necessary to bear in mind the possibility of there being other forms of heart block, although it is my opinion that the term heart block should not be applied to any condition other than functional insufficiency of the auriculoventricular bundle.

1. It is conceivable that under certain circumstances the cardiac impulse, through disease of the auricles or of the great veins, may be so feeble as always to constitute a subminimal stimulus for the ventricles. Under such circumstances, the auricles and ventricles would beat independently of one another. I know of no instance of heart block clearly due to such disturbance.
2. On the other hand, it is conceivable that through disease or drugs the irritability of the ventricles may be reduced to such an extent that auricular impulses of presumably normal strength may fail to act as efficient stimuli to the ventricles. According to Straub, the administration of antiarin, an alkaloid of the digitalis group, to the frog may be followed by the development of a partial block.[66] Straub has brought forward evidence which seems to indicate that in such cases the antiarin acts by diminishing the irritability of the heart muscle. This fact is of very great interest in that it may serve to explain the observation recently made by MacKenzie that in man the administration of digitalis may result in the development of a partial block, apparently at the auriculoventricular junction.[58] In the same connection Hering has shown that the apparent block following the administration of strychnia can likewise be explained only upon the assumption that the irritability of the ventricular muscle is reduced by the drug.[67]

Since allorhythmia and complete independence of the beats of auricles and ventricles apparently may be brought on in several ways, the question suggests itself: What is the cause of heart block in man? A definite answer to this query can not be given in the present state of our knowledge. The only justifiable answer is that disease of the auriculoventricular bundle has been found in all cases, now four in number, of Stokes-Adams disease (heart block) which have come to autopsy since it has been proved that the auriculoventricular bundle constitutes the only physiologic nexus between auricles and ventricles.[68]

62. Hering: "Ueber die unmittelbare Wirkung des Accelerans und Vagus auf automatisch schlagende Abschnitte des Säugethierherzens," Pflüg. Arch., 1905, vol. cviii, p. 281 Hering here does not refer to the cause of stoppage of the ventricles seen on vagus stimulation in the normal heart.

63. His, Jr.: "Ein Fall von Adams-Stokes'scher Krankheit mit ungleichzeitigem Schlagen der Vorhöfe und Herzkammern (Herzblock), Deuts. Arch. f. klin. Med., 1889, vol. lxiv, p. 316.

64. Cullen and Erlanger: "Experimental Heart Block," Read before the Johns Hopkins Med. Soc., April 23, 1906.

65. Webster: "Cardiac Arrhythmia in Relation to Cerebral Anemia and Epileptiform Crises," Glasgow Hosp. Rep., 1900, vol. iii, p. 413.

66. Straub: "Ueber Wirkung des Antiarins am ausgeschnittenen suspendirten Froschherzen," Arch. f. exp. Path. u. Pharm., 1901, p. 366.

67. Hering: Centbl. f. Physiol., 1901, vol. xv, p. 193.

68. Stengel: "Fatal Case of Stokes-Adams Disease With Autopsy," Amer. Jour. Med. Sc., 1905, vol. cxxx, p. 1083. Also Hay: "The Pathology of Bradycardia," Brit. Med. Jour., Oct. 21, 1905, p. 1034. Also Schmoll: "Adams-Stokes Disease," THE JOURNAL A. M. A., vol. xlvi, p. 361. Also Jellick, Cooper and Ophüls: "The Adams-Stokes Syndrome and the Bundle of His," THE JOURNAL A. M. A., March 31, 1906, p. 955.

Auto Saves Lives.—With the advent of the motor in a country village and its appearance on its highways and byways, the horses will get over their restiveness and the antipathy which some farmers have against automobiles will quickly disappear. The motor car that takes the physician to the bedside of the farmer's wife in half the time a horse would and by promptness enables him to save her life can no longer be considered a thing of evil.—*Automobile.*

AN ANALYSIS OF EIGHT HUNDRED AND EIGHT CASES OF CHOREA, WITH SPECIAL REFERENCE TO THE CARDIO-VASCULAR MANIFESTATIONS.*

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Some time ago Dr. Thomas suggested to me that it might be of interest to analyze the records of the cases of chorea which had been treated in his department in the Johns Hopkins Hospital Dispensary with reference to the cardio-vascular manifestations. For the most part these cases have been rather carefully studied, each patient, as far as possible, having been sent to the medical department for special notes on the heart. Last fall, accordingly, I undertook this task, which was particularly interesting to me in view of the fact that many of the special notes had been made by myself. I have added to these cases those which have been treated in the hospital wards during the same period, the majority of which I have also been able to study.

My plan was somewhat similar to that which was adopted a few years ago in the study of the cardio-vascular complications and sequels of typhoid fever. It involved: 1. A study of the records of these cases while under treatment. 2. A study of the pathological observations in the fatal cases. 3. An investigation into the present condition of all old patients with whom it was possible to enter into communication.

The amount of time required to go over so large a number of cases made it impossible for me to finish this whole undertaking in time for this session. That which I present consists of a brief summary of the first part of the work, namely, a study of the records of 808 cases of chorea treated in the Johns Hopkins Hospital and Dispensary, with special reference to the condition of heart and vessels.

Number of Cases.—The material amounted to 808 cases, of which 698 were treated in the dispensary and 110 in the wards of the hospital.

Race.—Of these cases, 783, or 96.9 per cent., were white; 25, or 3 per cent. only, were colored. As the proportion of colored patients treated for all diseases in the medical department of the hospital and dispensary amounts to about 12 per cent., it may be seen that these figures go to support the observations of Weir Mitchell and others that chorea is relatively rare in the negro.

Sex.—Two hundred and thirty-two, or 28.7 per cent., of these cases were in males; 576, or 71.2 per cent., were in females: about the usual proportion.

Age.—The following table, arranged by hemi-decades, will show the incidence of chorea according to age:

TABLE SHOWING INCIDENCE OF CHOREA ACCORDING TO AGE.

YEARS.	Cases.	Percentage.
1 to 5	20	2.5
10 to 15	369	46.2
15 to 20	83	10.4
20 and over	20	2.5
Uncertain	10	....

It may thus be seen that 84.5 per cent. of the cases were between the age of 5 and 15.

Number of Attacks.—The frequency of relapses and recurrent attacks of chorea is well recognized. In 799 of these 808 cases good records could be obtained as to the number of attacks. In 499, or 62.4 per cent., the patient was seen in the first attack alone. In 163, or 20.4 per cent., there was a history of two attacks. In 137, or 17.1 per cent., there was a history of three or more attacks.

Incidence of Rheumatism.—A point of special importance, particularly with regard to the occurrence of cardio-vascular manifestations, is the frequency with which rheumatism was observed, or distinctly noted in the history. The atypical and mild character of acute rheumatism in children is familiar. Considering the histories given by the patients or their parents, it was deemed wise for our present purposes, to classify arbitrarily, as acute rheumatism, all those cases in which there was a clear, definite history of pain and tenderness in joints. The patients and their parents and friends were always carefully questioned on this point. Out of 789 cases in which there was a record as to the previous history of the patient, in 171, or 21.6 per cent., a history of rheumatism was obtained.[1] In 618, or 78.3 per cent., there was no history of rheumatism.

Fever.—Observations on the temperature, important though they undoubtedly are, were unfortunately not made in many of the dispensary cases. A discussion of the temperature records in the hospital cases is reserved for the section treating of organic heart lesions.

Heart.—In 118 cases in the dispensary, and in one case in the hospital no note on the heart was recorded. Of the remaining 689 cases, cardiac murmurs were detected in 235, or 40.5 per cent.; they were absent in 345, or 59.4 per cent. In about one-quarter of the instances with abnormal heart sounds, the murmurs were soft systolic souffles, heard at the base alone, or over the whole cardiac area, and unassociated with other modifications of the size or functions of the heart, such as might justify the diagnosis of organic lesion.

In 175, or 25.4 per cent., of the cases in which an examination of the heart was recorded, conditions justifying the diagnosis of organic cardiac disease were found. In 16 more instances the signs were sufficient to warrant a reasonable suspicion that such changes were present. Including these, the proportion of cases with possible organic change would be raised to 27.7 per cent.

Character of the Cardiac Lesions.—The cases in which the diagnosis of organic cardiac disease was made have been divided into three classes, one in which the condition was certain; another in which the existence of organic change was regarded as probable; a third, which has been already mentioned, including 16 cases in which organic lesions were suspected. Taking into consideration those cases only in which organic lesions were deemed probable, 175 in number, there were:

Cases of mitral insufficiency	111
Cases of mitral stenosis	7
Cases of mitral stenosis and insufficiency	39
Cases of mitral and aortic insufficiency	10
Cases of mitral stenosis and aortic insufficiency	1
Cases of double mitral disease and aortic insufficiency	1
Cases of acute endocarditis, probably mitral in character	6

In 20 instances with definitely recognized organic lesions an acute endocarditis was also present. There were 3 cases of acute pericarditis. In 2 instances a diagnosis of adherent pericardium was made in a relapse.

Fatal Cases.—There were 4 fatal cases of chorea insaniens, and one case in which the patient died during an attack of acute rheumatism which had been associated with a choreic attack. Of the 4 cases of chorea

* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. In some of these cases rheumatic symptoms were observed while the patient was under treatment.

insaniens there were autopsies in two instances. In both of these cases the patient had had rheumatism, one in connection with the fatal attack. In both instances acute endocarditis was found; once, mitral; once, aortic and mitral. Of the two other cases, in one a well-marked endocarditis and pericarditis was recognized *intra vitam*, while in the second, a soft systolic murmur alone was audible over the cardiac area; at the same time, however, high fever and an extremely rapid, irregular pulse justified the diagnosis of an endocarditis. In this case there was no history of rheumatism. In the fifth case, in which death occurred during an attack of acute rheumatism which had followed chorea, there was subacute endocarditis of the mitral and aortic valves as well as an acute pericarditis.

RELATION OF THE CASES WITH CARDIAC INVOLVEMENT TO RHEUMATISM, TO RECURRENT ATTACKS AND TO FEBRILE MANIFESTATIONS.

Relation of Rheumatism to Cardiac Involvement.—It was deemed of interest to note the relation of those cases with cardiac involvement to rheumatic complications. The following table shows the proportion of instances in which acute rheumatism occurred among the cases, with and without cardiac involvement:

TABLE SHOWING INCIDENCE OF RHEUMATISM.

	Rheumatism.		No history of rheumatism.	
	Cases.	Per cent.	Cases.	Per cent.
Without cardiac involvement	105	16.9	513	83.
With cardiac involvement	66	38.5	105	61.4

The relatively higher percentage of a history of acute rheumatism in those cases with cardiac involvement might, in part, be due to the fact that a large proportion of these cases were hospital patients whose histories were taken with greater care and accuracy. Looking at the question from another standpoint (Chart 1), however, it was found that:

Of 171 cases with a history of rheumatism, 34.5 per cent. showed organic cardiac lesions.

Of 618 cases with no history of rheumatism, 16.9 per cent. showed organic cardiac lesions.

It is clear, therefore, that cardiac manifestations were more frequent in those patients who had suffered from acute polyarthritis.

Relation of Relapses and Recurrent Attacks to Cardiac Involvement.—The following table bears on the question of the relative frequency of recurrent attacks in cases with and without cardiac lesions:

TABLE ILLUSTRATING FREQUENCY OF RECURRENT ATTACKS IN CASES WITH AND WITHOUT CARDIAC LESIONS.

	Single attack.		Two attacks.		Three or more att'cks.	
	Cases.	Pr ct.	Cases.	Pr ct.	Cases.	Pr ct.
Without cardiac involvement	414	65.6	121	19.2	94	14.9
With cardiac involvement	85	50.	42	24.7	43	25.2

If, again, one divide the total number of cases into three groups, those in which there is a record of but one attack, those in which there is a record of two attacks, and those in which there is a record of three or more attacks, and study the percentage of cardiac lesions in each group (Chart 2), the following figures are obtained:

PERCENTAGE OF CARDIAC LESIONS IN CASES WITH SINGLE AND MULTIPLE ATTACKS.

	Single attack.		Two attacks.		Three or more att'cks.	
	Cases.	Pr ct.	Cases.	Pr ct.	Cases.	Pr ct.
Number of cases	499		163		137	
Cardiac lesions	85	17.	42	25.7	43	31.3

The histories of individual cases, moreover, show very clearly in a number of instances, the development of cardiac lesions with relapses and recurrent attacks.

Relation of Fever to the Development of Cardiac Complications.—The temperature, as has been said, was regularly recorded only in hospital cases. In but 1 out of 110 instances was there a complete absence of fever during the attack. In 4 more of these cases it was noted that the temperature was normal during the greater part of the time, the elevations being slight and occasional. In the rest of these cases there were frequent elevations of the temperature above 99 degrees; in the majority, indeed, it remained somewhat above normal during the greater part of the acute attack.

Of particular interest is a comparison of the temperature records of those patients with and without cardiac complications. The following table shows the temperature records in 48 cases without demonstrable cardiac involvement as compared with 59 cases in which organic lesions were detected:

TABLE SHOWING PREVALENCE OF FEVER IN CASES WITH AND WITHOUT CARDIAC INVOLVEMENT.[2].

Temperature	No fever.		99 to 100.		100 to 101.		101 or above.	
Cardiac Involvement	Cases	P. A.	Cases	Pr.ct.	Cases	Pr.ct.	Cases	Pr.ct.
Absent	1	2	19	39.5	24	50	4	8.3
Present	0	..	9	15.2	19	32.2	31	52.5

If we look now at the question from the standpoint of the percentage of cardiac lesions detected among these cases when arranged in groups according to the degree of fever present (Chart 3), we obtain the following suggestive table:

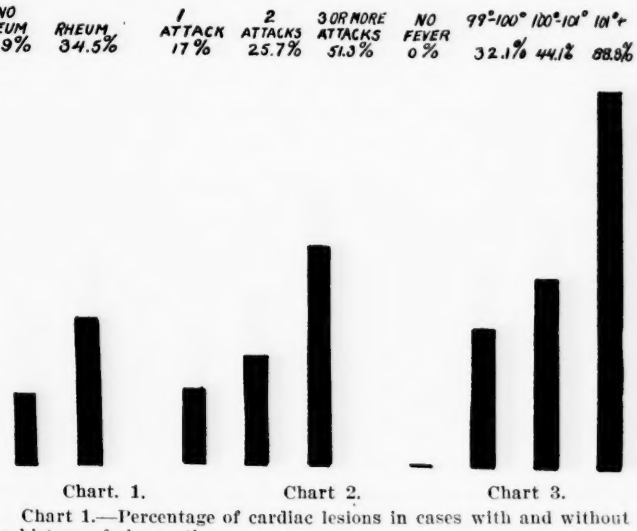

Chart. 1. Chart 2. Chart 3.

Chart 1.—Percentage of cardiac lesions in cases with and without a history of rheumatism.

Chart 2.—Percentage of cardiac lesions in relation to number of attacks.

Chart 3.—Percentage of cardiac lesions in relation to the degree of fever.

TABLE SHOWING PERCENTAGE OF CARDIAC LESIONS RELATIVELY TO THE PRESENCE AND DEGREE OF FEVER.

Temperature	No fever.	99 to 100.	100 to 101.	101 or above.
Cases	1	28	43	35
Cardiac lesions	..	9 (32.1%)	19 (44.1%)	31 (88.8%)

From the clinical symptoms and the condition of patients returning to the hospital subsequently, there is considerable reason to believe that, in a large proportion of these febrile cases, acute endocardial complications were present. In many patients in whom in one attack there was fever without evidence sufficient to justify a diagnosis of organic cardiac lesion, there was found, on later observation, definite valvular disease.

2. In one of these cases without heart lesion the temperature was doubtless due to an abscess, while in two or three of the cases with cardiac involvement the high temperature was due to complicating rheumatism.

CONCLUSIONS.

A consideration of these cases would suggest that well marked febrile manifestations, without rheumatism, occurring during the course of chorea, especially if they be associated with undue rapidity or irregularity of the pulse, should be regarded as at least strongly suggestive evidence of acute endocarditis. It may of course be possible that such fever is but the index of an infection which lies at the bottom of the choreic manifestations as well as the associated endocarditis. Slight grades of fever were, it is true, observed in almost every case treated in the wards of the hospital. There is nothing, however, in these studies to justify conclusions with regard to the old question as to whether endocarditis in chorea represents a secondary infection or a special localization of an infectious agent which is responsible for the essential manifestations of the disease.

The most important and interesting part of this investigation remains to be carried out, namely, the study of the circulatory conditions in old patients, but it may not be amiss to call attention again to certain points of interest brought out by this preliminary analysis.

1. Of 689 cases of chorea observed at the Johns Hopkins Hospital or Dispensary during one or more attacks, 25.4 per cent. showed evidences of cardiac involvement; such evidence was present in over 50 per cent. of the patients studied in the wards of the hospital.

2. Cardiac involvement occurred with somewhat greater frequency in those cases in which there was a history of acute polyarthritis than where such history was absent.

3. Cardiac involvement was commoner in cases of chorea with frequent recurrences than in those in which there was a history of a single attack.

4. In 110 cases of chorea treated in the wards of the hospital there was fever of a moderate extent in almost every instance.

5. In a large majority of the cases in which high fever was present there was evidence of cardiac involvement.

6. There is good reason to believe that the presence of fever in otherwise uncomplicated chorea is, in a large proportion of cases, associated with a complicating endocarditis.

CARDIAC HYPERTROPHY AS OBSERVED IN CHRONIC NEPHRITIS.*

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The frequency of a pronounced hypertrophy of the heart in kidney disease was first pointed out by Bright[1] in 1836. It was exhibited in 23 per cent. of his cases, in most of them affecting the left ventricle, without any cardiac or aortic lesion as a cause. His theory, chemical in nature, considered that an altered condition of the blood either stimulated the heart excessively or else affected the arteries and capillaries in some way to make it more difficult for the heart to drive the blood through to the veins.

G. Johnson[2] confirmed his findings and adopted the second possibility as an explanation, assuming that the blood is laden with impurities as a result of the renal disease, and that these poisons stimulate the arterioles to contract by way of the vasomotor nerves and so necessitate an hypertrophy of the left ventricle. His conception assumed the existence of an hypertrophy of the muscular layer of the arterioles and explained only the left ventricular hypertrophy. In 1856 Traube[3] advanced a purely physical theory to explain the cardiac hypertrophy which occurs in chronic nephritis. Two factors, he concluded, produce an increased aortic pressure: First, an obliteration of numerous vessels in the contracted cortex or their compression by the inflammatory exudate; second, an increase of the amount of fluid in the arteries as a result of the lessened abstraction of water by the reduced kidney structure. In regard to the first factor, Ludwig and his followers, however, proved that an increased pressure in the renal vessels would not produce any permanent increase of the general arterial pressure (ligature of both renal arteries). As for the second factor, Traube's opponents claimed correctly that in chronic contracted kidney there was no decrease, but always an increase in the amount of water withdrawn from the blood, and in addition a diminished excretion of urine. A resulting plethora is promptly equalized by vaso-dilation and no increase of blood pressure results.

Cohnheim[4] modified Traube's hypothesis by assuming that despite the resistance in the kidneys the same amount of blood enters the renal arterioles, and as their tonus depends on the amount of urinary substances to be eliminated there must be an abnormal resistance. In 1872 Gull and Sutton[5] considered that a general arterio-capillary fibrosis was the primary condition, and that both the contraction of the kidney and the hypertrophy of the heart were secondary. Although this hypothesis will explain the condition in the true arteriosclerotic kidney, it is of no value in interpreting the other forms of renal disease, nor does it account for an hypertrophy of the right ventricle and auricles.

In 1877, Ewald[6] found hypertrophy of the muscular layer of the systemic arterioles and suggested that the cardiac hypertrophy depended on this widespread change, and that the latter was due to the increased viscosity of the blood with excessive friction in the capillaries. The hypertrophy of the auricles and right ventricle is left unexplained by such an hypothesis, and since an accurate method for estimating the viscosity of the blood has been devised by C. Hirsch and C. Beck,[7] no constant relation between it and increased blood pressure on the one hand and cardiac hypertrophy on the other has been observed. In 1878 v. Buhl[8] believed both renal lesion and cardiac hypertrophy to be concomitant results of the inflammatory action on the kidney and heart of some unknown substances. He found myocarditis in 65.7 per cent. of contracted kidneys, and very often a relative narrowing of the aorta. Such cardiac hypertrophy he considered excentric, due to a previous dilatation. His percentages have not been confirmed except in a measure by Debove and Letulle[9] in 1880. In any event, his theory would not explain the cardiac hypertrophy of other types of renal disease. In 1880 DaCosta and Long-

* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Guy's Hosp. Rep., 1, 1836, p. 396; vol. ii, pp. 234 and 259.
2. "Diseases of Kidney," second edition, 1856.
3. "Uber den Zusammenhang v. Herz u. Nieren Krankheiten." Hirschwald, Berlin, 1856.
4. Allg. Path., second edition, vol. ii, p. 258.
5. Med. Chir., Trans., vol. lv, p. 1872.
6. Virchow Arch., vol. lxxi.
7. Münch. med. Wochschr., 1900, No. 49.
8. Deut. Arch. f. klin. Med., vol. lxxii; also Mitt. aus dem path. Inst. z. München., 1878, p. 38.
9. Arch. gen. de Med., 1880, vol. i, p. 278.

streth[10] attributed both renal disease and cardiac hypertrophy to a degenerative atrophy of the renal ganglia and of the lower cervical ganglia of the sympathetic. Senator believes such degenerations are due merely to old age. In 1878 he[11] suggested the possibility of different causes for the cardiac hypertrophy in the various types of renal disease. In 1902, influenced by Strauss' investigations, he[12] advanced the following: "In unfavorable cases of chronic parenchymatous nephritis and secondary contracted kidney, the retained metabolic products irritate the heart and the arterioles, causing contraction of the latter and sometimes an accompanying thickening of their walls. Hypertrophy of both sides of the heart results. The left hypertrophies more than the right, because the former not only responds by increased activity to the direct stimulation of the blood, but also has to overcome the resistance due to the contraction of the peripheral arteries, whereas the right ventricle suffers less because the pulmonary vessels possess so little tonus. In primary chronic interstitial nephritis the same irritation exists but acts more insidiously."

In 1900, Bier[13] sees in the cardiac hypertrophy and the accompanying vascular changes a purely compensatory process, useful and necessary. Without it a prolongation of life would be impossible.

These in brief have been the more striking theories advanced to explain the frequent association of cardiac hypertrophy in chronic nephritis. More recently, 1905, from Krehl's clinic, M. B. Schmidt[14] compared the blood pressure of numerous cases of nephritis during life with their histologic picture postmortem. In pure parenchymatous nephritis without glomerular changes, no increase of blood pressure was observed. When the glomeruli were plainly involved the blood pressure was increased. From the same clinic A. Loeb,[15] in 1905, decided that the cardiac hypertrophy is secondary to increased blood pressure, that both are compensatory reactions, that the increased vascular tonus occurs when the glomeruli are imperfectly supplied with blood, either by an inflammatory process or by stasis, so that their capillaries are thereby under too low pressure for proper filtration. He does not decide whether this general vasoconstriction is brought about purely reflexly or by the retention of some poisons. In his last edition, Krehl,[16] 1906, accepts Loeb's theory, and adds that all renal affections which do not influence the circulation are accompanied chiefly by alterations of the tubular epithelium, whereas those in which the blood pressure is raised show essentially a glomerular involvement. He believes that the increased blood pressure may be produced either reflexly or by substances which are imperfectly excreted by the damaged glomeruli. Suggestive of the latter origin, he cites the pressure-lowering influence of a milk diet and the pressure-elevating influence of uremic conditions.

In 1905, Müller,[17] of Munich, in discussing Loeb's theory, cites cases to show that hypertension does occur without glomerular involvement, but always accompanied by renal inadequacy. He believes that increase of blood pressure and cardiac hypertrophy are limited almost exclusively to nephritis with uremic tendencies, and concludes that the uremic poison is identical with or closely related to the substances which induce hypertension, that slightly concentrated they stimulate the vasomotor, strongly concentrated they exert a more or less profound intoxication of the central nervous system.[18] As corroborative evidence he cites: the almost constant hypertension in uremia; the marked increase of tension and headache (uremic) following a nitrogenous meal, which tendency is practically limited to renal cases liable to uremia. He regards the possibility of some adrenal-like substance being the cause of the hypertension[19] and suggests that, whatever the nature of the poison which increases peripheral resistance, it may also exert an irritating action on the heart muscle. The cardiac hypertrophy can not be regarded as the cause of the hypertension, but a persistence of the latter must lead to the former, because hypertension occurs very early in many cases of nephritis (scarlet fever, sublimate poisoning) long before any cardiac hypertrophy or arteriosclerosis could develop. Neither can any definite organic change in the vessel walls be supposed to cause the hypertension; because the tension especially early in nephritis oscillates so decidedly and becomes normal in acute nephritis as soon as the process has subsided.

The relations between arteriosclerosis and nephritis are complicated. Probably many poisons affect both systemic arteries and kidney structure, and the same poisons very likely also irritate the heart muscle itself and so assist in the production of an hypertrophy of its fibers. The frequent occurrence of aseptic pericarditis argues in favor of a direct toxic action on the heart. Rapidity of development and body nourishment are important factors.[20] Hypertrophy of the heart has been noted in scarlet fever within 4 weeks. With an almost complete loss of kidney substance in cystic and tuberculous kidneys and with the nephritis which develops at the height of a sepsis, no hypertrophy results. Although the hypertension must be compensatory and act by increasing the current rapidity through the affected kidneys, yet it is doubtful if the increased excretion of urine is always dependent on such a flooding (Loewi) or on a stimulation of the glandular activity. For in some cases with oliguria and edema we see no diuretic action result from salt or other diuretics (caffein, theobromin), although in cardiac dropsies such diuretics act surely and promptly. Perhaps in such cases the kidney structures on which these drugs should act are diseased.

In 1905, Volhard,[21] of Geissen, also attributed the cardiac hypertrophy to an involvement of the water filtrating apparatus (the glomeruli). If increased work is thrown on this mechanism, compensation occurs in one of two ways: 1, by an increased filtering surface (extirpation of one kidney, early cases of diabetes with polyuria before cardiovascular changes have resulted); or, 2, by increasing the pressure through the filter.

10. Am. Jour. Med. Sciences, July, 1880.
11. Virchow Arch., vol. lxxiii, p. 1878.
12. Spez. Path. und Ther., vol. xix, part 1, second edition.
13. Münch. med. Wochschr., vol. xvii, April, 1900.
14. Verh. d. deut. path. Gesell., 1905, p. 107.
15. Deut. Arch. f. klin. Med., 1905, vol. lxxxv, p. 348.
16. "Path. Physiology," Vogel, Leipzig.
17. Verh. Deut. path. Gesell., 1905, p. 64.

18. Bouveret, quoted by Bradford, Progressive Medicine, December, 1902, claims that cardiac hypertrophy is absent in just those cases which are prone to develop uremia and soon terminate fatally, and that uremia is more frequent in cases without cardiac hypertrophy. Bradford, in the Lancet, Aug. 6, 1904, p. 354, mentions the same combination in the small white kidney.

19. Tigerstedt, Forlanini and Riva Rocci.

20. Bradford, in Progressive Medicine, December, 1902, p. 238, does not regard the age and nutrition as an important factor, because he has seen kidney disease develop in young adults without any subsequent cardiac hypertrophy.

T. C. Janeway, in his paper, "Chronic Hypertension," read before the Association of American Physicians, May 18, 1906 emphasizes the nutritive factor in arteriosclerosis, suggesting that the changes in the coronary arteries and the degenerative tendencies of age make a poor basis for the development of new heart muscle.

21. Verh. Deut. path. Gesell., 1905, p. 112.

Rapid severe strains on this mechanism result in injury to the vessel walls and edema as in acute glomerulonephritis. A more insidious tax allows the cardiovascular system time to hypertrophy, and the resulting polyuria is perhaps only the expression of an excessive compensation.

During the past few years comparatively little irrefutable evidence directly bearing on this subject has been contributed by experimental medicine and pharmacology, although many pertinent questions have been investigated and partially settled, and fruitful fields for more definite information opened.

Ascoli and Figari[22] found that in some rabbits with a unilateral ligation of the ureter nephrolysins produced generally (not, indeed, always) a marked cardiac hypertrophy, especially of the left ventricle, in from 2 to 8 weeks; again, that dogs injected with normal rabbit serum showed no variation in the blood pressure curve, while those injected with a mixture of nephrolytic rabbit serum exhibited a contraction of the peripheral vessels. Pearce's[23] careful work throws doubt on their claim, and I have been unable to find any confirmation of their findings elsewhere. In a thorough review, Sata[24] mentions their work, but does not comment on their conclusions. Pearce[25] studied adrenalin poisoning in animals. After large doses, within 24 to 72 hours he found dilatation of the cardiac chambers, edema of muscles, splitting of muscle cells and acute granular degeneration. After daily doses for 11 days (animal living 16 days), the heart muscle was thickened; there was much new connective tissue distributed focally, round-cell infiltration, swelling, vacuolation, granular degeneration of muscle fibers, edema and increase of fine elastic fibers in the new connective tissue. The orifices of the coronary arteries were obscured and obstructed (apparently by a lesion of the aorta resembling recent aortitis). He thinks these lesions have no connection with ordinary myocarditis (human), but attributes them to mechanical efforts of contracting arterioles and over-acting heart. Similar results are reported by K. Ziegler.[26]

R. Tigerstedt[27] gave the name of rennin to a substance which he extracted from kidneys and which, when injected into the blood, markedly raised the blood pressure primarily by its action on the peripheral vascular nerve centers. His observations have not been confirmed as far as I know.

Richter's[28] brilliant results in producing a typical acute glomerulo-nephritis with hydrops by injecting uran nitrate open a possibility for future research on the question under discussion. Heineke and Meyerstein, in Müller's laboratory, have confirmed Richter's experimental glomerulo-nephritis with uran nitrate.

Loewi's[29] experiments on caffein diuresis have perhaps added additional reasons for condemning some of the older theories mentioned at the beginning of our discussion. Israel[30] fed rabbits with increasing doses of urea for a considerable time and produced hypertrophy of both heart and kidneys.

In 1900, Croftan,[31] from a series of experimental injections of xanthin and hypoxanthin in rabbits, concluded that these and kindred substances produce a rise in arterial pressure, spasm and endarteritis of renal and peripheral vessels and cardiac hypertrophy of left and subsequently of the right ventricle. No confirmatory experiments are recorded so far as I know.

The beneficial action of potassium iodid in arteriosclerosis and nephritis is now credited to its action in diminishing the viscosity of the blood.[32] Despite the recent decided interest in nephritis and in arteriosclerosis, as well as the many experimental investigations in point, but few more facts, either pertinent or important, are worth mentioning here. To explain some of the difficulties and discrepancies in published statistics, the unfortunate lack of uniformity of classification of the different varieties of nephritis might be alluded to. Again, from the cardiac side, accurate observations were lacking until Hasenfeld, in 1897, and von Hirsch, in 1900, both from the Leipzig school, examined the hearts in 25 cases of pure interstitial nephritis. They employed Müller's careful method, weighing the individual chambers, comparing the figures with the body weight and making allowances for the co-existence of general edema. In brief, over 75 per cent. of their cases exhibited an hypertrophy of all chambers of the heart. v. Buhl's figures were 75 per cent. Krehl, Romberg and Henschen have all noted clinical evidence in proof of such a general involvement.

From the last 18 months' autopsy records of the New York City Hospital (for which I am indebted to the kindness of my friend and colleague, Dr. Horst Oertel, and of his assistants, Drs. Symmers and Crowell) different results are obtained. Before quoting them I should mention that probably 75 per cent. of our material was derived from individuals who died above the age of 50, and that Müller's accurate method was not employed.

286 AUTOPSIES, 151 CASES OF NEPHRITIS.

	Per cent of Hyp. of of L.V	Per cent of Hyp. of L. & R.V.	Per cent of Normal or Atro. Heart
66 chronic interstitial.....	30.5	11.5	58
22 arteriosclerotic interstitial....	27	9	64
25 chronic parenchymatous	12	4	84

Dr. Oertel concludes that the microscopic examination of some hearts, atrophic or normal in size, indicates that a previous hypertrophy has existed. This is shown by the presence of a certain number of atrophying large muscle fibers. Both Dr. Oertel's impression and my own (substantiated by a few definite cases[33]) agree that, in many of these cases of atrophic and normal sized hearts, patients came to autopsy in a very poor state of nutrition. Three explanations suggest themselves: 1. That the patient's power of nutrition was unequal to produce an hypertrophy. 2. That the disease developed too severely and suddenly to permit any such hypertrophy. 3. That the heart was originally hypertrophied and had

22. Berl. klin. Wochschr., 1902, p. 563.
23. Trans. Am. Assoc. Phys., vol. xviii, pp. 594-5.
24. "Ueber die Wirkung u. die Spezipitate der Cytotoxine in Organismus," Ziegler, Beit. z. path. Anat., vol. xxxix, No. 1, 1906.
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26. Ziegler's Beit., 1905, vol. xxxviii, p. 229.
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28. Die exp. Erzeuging v. Hydrops bei Nephritis. Beit. z. klin. Med. Festchr. H. G., Prof. Senator, Berlin, 1904, Hirschwald, p. 283.
29. Arch. f. exp. Path. u. Pharm., 48, p. 410; 50, p. 326.
30. Virchow Arch., 1881, vol. lxxxvi, p. 299.
31. Amer. Jour. Med. Sc., November, 1900, p. 592.
32. Müller, O., and Inada: Deutsch. med. Wochscht., No. 48, 1904; also Breitner: Pest. Med. Chir. Presse, 1905, No. 41, p. 506; Erlenmeyer: Deutsch. med. Wochsch., No. 7, Feb. 15, 1906, p. 259.
33. Of nephritis, 38 cases have been autopsied in 1906. In 10 the nutrition was marked "good." Of these, 6 showed hypertrophy of the left ventricle, and 1 of both ventricles. In 3 the heart was of normal size or atrophied. In 7 the nutrition was marked "fair." Of these, 1 showed hypertrophy of the left ventricle, 2 of both ventricles, and in 4 the heart was of normal size or atrophied. In 15 the nutrition was marked "poor." Of these, 4 showed hypertrophy of the left ventricle, and in 11 the heart was of normal size or atrophied. In 6 the nutrition was marked "emaciated." In none of these was the heart hypertrophied.

become later atrophic. In most of our cases more probably the last explanation was illustrated because of the co-existing atrophy of the other organs.

Any theory in explanation of all the recorded conditions, and especially Loeb's theory, must satisfy the striking peculiarity so well brought out by Councilman last year. His autopsy records showed that in amyloid disease, excepting three cases complicated by arteriosclerosis or chronic interstitial nephritis, no cardiac hypertrophy existed, despite the very decided glomerular involvement. Similar observations are numerous in chronic pyelonephritis with almost complete renal atrophy and cystic degeneration.

In an effort at compensation the patient's nutritional capacity must, I conceive, be the keystone to the successful accomplishment of such an effort. Some individuals of poor nutrition, of deficient recuperative power, perhaps due to heredity or to some acquired fault, possess neither a sufficient resistance to the drains of the renal lesion nor the reacting power to compensate the mischief by a compensatory increased tension and subsequent cardiac hypertrophy. Suggestive analogies in infection are easily adduced. We are all familiar with the progress of syphilis attacking some poorly nourished woman in whom a moderate course of mercury still further reduces her physical condition, while the husband from whom the infection was acquired readily withstands both disease and treatment. Again, Wright has several times called attention to cases of chronic staphylococcus infection with a low staphylococcic-opsonic index, in which no response of the organism can be evoked by any method of vaccination or amount of vaccine, whereas in others vaccination promptly raises the index and the patient gets well.

The only therapeutic indications to be adduced from this presentation are all so evident and so constantly applied that I hesitate to add, in conclusion: We should, of course, first and always, work against the cause, next favor hypertension, or, at least, not combat it early in the disease; then preserve and save the heart by every known method, for example, by limitation of fluids ingested, as von Noorden has so timely urged; and, finally, keep up the patient's nutrition in every way, so that as perfect and permanent a compensation as possible may result.

The importance of this in the dietetic problem of nephritis was sufficiently emphasized last year by Shattuck. It was my good fortune and that of all his pupils for the past fifteen or twenty years to hear him urge time and again the necessity of supporting the nephritic's nutrition.

NOTE: THE DISCUSSION ON THE SYMPOSIUM ON DISEASES OF THE HEART WILL FOLLOW THE TWO OTHER PAPERS IN THE SYMPOSIUM, BY DRS. DAVIS AND ANDERS, NEXT WEEK.

The Automobile's Possibilities.—A satisfactory physician's car can be bought for much less than $1,000, capable of maintaining an average speed of fifteen miles an hour over all but the very worst roads and powerful enough to climb any hill without difficulty. One such car will easily do the work of three horses for the busy country physician, will double his leisure hours and greatly increase his profits, while during favorable weather the long, tiresome drives behind jaded horses will be delightfully replaced by the rapid motor doing the distances in a fraction of the time, without thought of pity for the motor power or serious loss of time.—Dr. Doolittle in *The Automobile.*

SUCCESS: THE SURGICAL DESIDERATUM.*

A. ERNEST GALLANT, M.D.
NEW YORK CITY.

'Tis not in mortals to command success,
But we'll do more, Sempronius,—
We'll deserve it.—(Addison.)

When the surgeon has completely removed the diseased structures, repaired damaged tissues or replaced dislodged organs or viscera, and the patient has survived the ordeal, has the operator completed his work or should he see to it that the resulting condition in the months and years to come is such as will elicit from the patient words of praise for the operator and operation?

While it would be a matter of great satisfaction if I could give tables of hundreds of operations without a death, or enlarge on the successes which have (and have not) followed my work, I prefer on this occasion to direct attention to certain factors in dealing with individual cases which will aid the abdomino-pelvic surgeon in attaining this desirable ambition—success—in some cases. For convenience and brevity the life history of the surgical patient may be divided into seven stages: 1, Antecedent; 2, precedent; 3, preliminary; 4, immediate; 5, convalescent; 6, subsequent; 7, conclusive.

HEREDITARY AND ACQUIRED DISEASES.

Tuberculous, rheumatic, gonorrheal or syphilitic diseases, whether involving the lungs, heart, liver, kidneys, spleen, brain and spinal cord or the gastrointestinal tract, must be taken into consideration before operation, as well as after. This was forcibly brought to my attention after operation on a man for appendicitis. For four years previously he had been treated medicinally for locomotor ataxia, which had been controlled. After operation the wound showed no tendency to heal. The man failed to retain nourishment by mouth or rectum, and died on the tenth day of starvation. The consulting surgeon opposed all my solicitations for energetic antisyphilitic medication, until the eighth day, at which time the patient was too low to absorb any drugs.[1]

An hereditary history of uterine cancer, the grandmother having died at 65 years of "cancer of the womb" and the mother when 49 years old, was considered justification for vaginal hysterectomy in Mrs. K. K., aged 38, mother of 5 living children, who was suffering from menorrhagia, lasting of late from 8 to 10 days. The enlarged uterus was retroverted and adherent in the cul-de-sac. During the past 14 months she has gained in health and strength, and is happy in the assurance that she is practically free from the danger of following in the footsteps of her grandmother and mother.

THE PRECEDENT HISTORY AND EXAMINATION.

The precedent history must always be given due consideration when deciding whether to operate at once or later. Rupture of any viscus, solid or hollow, calls for immediate action; strangulation, twisting, or complete obstruction demands immediate operation; whereas, on the other hand, we avoid operation during the acute invasion of the peritoneum by the gonococcus, and prefer to wait for "a more convenient season" when the Neisserian enemy shall have been starved into inactivity. When confronted by tubercular peritonitis, cysts, fibromata, etc., of slow growth we can more deliberately decide when and how to operate.

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* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Amer. Med., vol. iii, p. 837, 1903.

The precedent examination must enable the surgeon to answer, without bias, the following interrogations: (1) Does the focal condition explain and account for all the symptoms, or are other regions involved? (2) Has the attending physician, who has done his best, done all? (3) Is operation the only means of relief, and will the proposed operation remove all the trouble and relieve all the symptoms? In order to answer these queries intelligently the surgeon must be, first, a diagnostician—theoretical, logical and mechanical; second, a general practitioner, familiar with all that is best other than surgery, and, last, a surgeon who has the moral courage to decide when not to operate.

Extraordinary recoveries without operation do occur and nonplus the surgeon, as in the case of Mrs. C., aged 60, who for three weeks had been suffering with pain and swelling in the right half of the abdomen; eleven years ago she had a similar attack. The urine was scanty; temperature varied from 100 to 103.6 F., pulse from 80 to 100; tongue was deep red and fissured down the middle. There was rapid loss of flesh and strength. Her abdomen was enormously distended and fluctuant. A diagnosis of hydronephrosis was made and operation advised. Recently her son informed me that by the use of ice for ten days the swelling had been scattered, and the old lady had sailed away to her native, sunny Italy.

PRELIMINARY PREPARATION OF PATIENT.

The preliminary preparation of the patient for operation must aim for surgical cleanliness, cleanliness of the

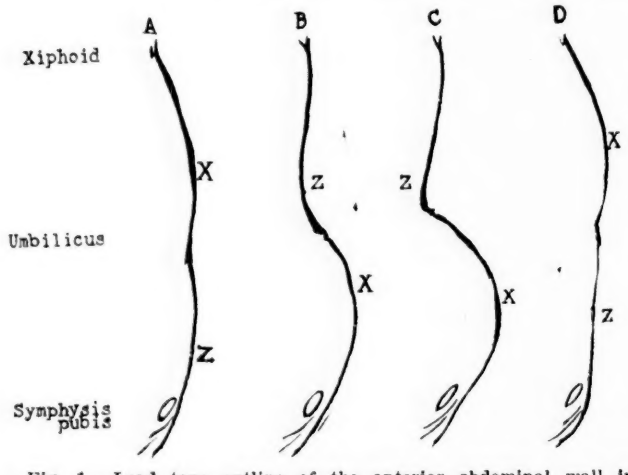


Fig. 1.—Lead tape outline of the anterior abdominal wall in Glenard's disease (visceroptosis). A, normal outline, standing without clothing; B, ptosis outline, standing without clothing; C, ptosis outline standing with waistbands fastened; D, outline same case, when recumbent. X, point of maximum protrusion; Z, point of maximum flattening.

emunctories and mind. In my work this begins two days before operation; liquid diet is given, alternating with water, eight ounces, every hour; the kidneys are washed out, and two laxative pills to clean out the bowels are given the second night before operation. To relieve the patient from undue unrest and to secure restful, good sleep a sedative is given each night. In cleansing the patient the night before operation my plan is as follows: (a) An enema of one quart of soapsuds; (b) a 1 to 2000 permanganate of potash, douche; (c) the hair is clipped close from the mons and vulva; (d) the abdomen and vulva are anointed with tincture of green soap, which is rubbed into the skin until dry, with a second and third coat, one over the other, each rubbed in until dry. In this way the soap penetrates the skin; the patient then goes to the bath tub and the nurse soaks and scrubs the abdomen and vulva until all the soap is removed, a process which involves more work than would at first seem likely, and secures cleanliness to a degree unobtainable by the soap plaster method. After drying the skin, three more coats of green soap tincture are rubbed on the skin and remain as a protective until the patient is placed on the operating table ready for the final scrub.

THE ANESTHETIC AND OPERATION.

The immediate steps involved are anesthesia, field preparation and operation.

As a stimulant of great value to the patient, a heart sedative and a quieter of respiration we use morphin (1/12 to 1/6 grain, in proportion to weight), placed dry on the tongue, 15 minutes before beginning ether. The shoulders should be level with the table and the head should be raised high enough to bring the chin near the sternum, a frequently overlooked measure for securing comfortable breathing. Ether, about half an ounce, is poured on my modification of the Allis inhaler, which is handed to the patient who holds it on the chest, near the mouth, and administers the anesthetic to herself, without fear of choking or of being suffocated. After a few minutes the patient will ask the anesthetist to take the cone, or her hands will relax and make it necessary to take it from her and to continue the administration, which has been free from the fear and nervousness felt when other methods are practiced. In this way a little ether is wasted, and the time prolonged, but to the patient the method is excellent. My average, per hour, has for years been 100 c.c. Squibb's ether.

Fig. 2.—Outline of abdominal "stock." Apron "a" is cut the shape of the space bounded by the anterior superior spines above, the groins, laterally, and the symphysis pubis below. The straps "c" and "c'" pass around the body, the end of "c" being drawn through buttonhole "d" and are pinned in front at "a." Perineal straps (not shown) fastened to buttons on tongues "b" and "b'" are pinned in front to "a."

The preparation of the operative field is accomplished by adding more soap, rubbing it in until dry and then scrubbing thoroughly until all the soap has been washed away. The skin is next rubbed with alcohol and then covered with a sterile towel.

The incision is made as short as the size of the fingers will admit, and as long as the size of the tumor necessitates; by preference through the inner edge of the rectus, even for appendicitis, as it affords access to the tubes on either side. Ligatures are applied to individual vessels, suture to broad surfaces, making use of No. 1 or 2 catgut. For facilitating the passage of sutures I have found the ingenious ligature carrier of Kurz very helpful.

As a rule, saline solution is used to wash out pus and blood, but at times I prefer simply to mop out the cavity and to close without drainage. After removal of broad ligament cysts, and after supravaginal hysterectomy, I carry a roll gauze drain into the vagina. A cigarette drain suffices after most appendicectomies.

Cocain, .1 per cent., injected under the epidermis, has served well in rupture of gastric ulcer, ruptured ectopic pregnancy, etc. Unless the patient is in a very bad condition I prefer to employ but one assistant, who must hand instruments, dressing, etc., thus reducing the chances of infection to a minimum. Closure of the

wound is accomplished by carrying a long-handled needle through all the structures; it is then threaded with silkgut and reversed; the fascia is then approximated with two, three or more catgut sutures, and intermediate silkgut to align the skin closely.

If much blood has been lost, the cavity is filled with saline solution, 120 F., or from two to four pints are allowed to run into the rectum while the patient is still on the operating table.

POSTOPERATIVE CARE.

Immediately subsequent to the operation I exercise great care not to expose the patient to a chilling of the surface by well-meant efforts on the part of the nurses to change the blankets and underclothing, preferring to wait until the patient is warm in bed and conscious enough to help.

As soon as the patient is conscious enough to drink she is made to take four ounces of hot (not tepid) water every fifteen minutes until vomiting occurs, as a means of washing out the stomach and ridding it of ether and mucus; then I wait two hours and thereafter give water hourly. If the stomach retains this quantity of water for six hours it is safe to begin giving milk and lime water. Lavage of the stomach while the patient is on the operating table will accomplish the same purpose, and in the few instances in which I have used it it has been very satisfactory.

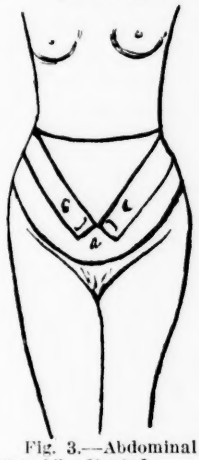


Fig. 3.—Abdominal "stock" adjusted.

For pain and nervousness I make use of bromid, chloral and a small quantity of morphin, on the ground that if sleep and rest be secured the patient will bear the next day's discomfort with greater fortitude. To secure rest these patients must be permitted to assume any position which will afford the least discomfort and I permit them to turn from side to side or lie on the back, as they deem best.

To the "tired, worn and weary" one who has been but a few hours removed from the operating table, nothing is so quieting and refreshing as light, gentle massage over the whole body, as shown by the patient falling to sleep during the process.

Postoperative weakness is largely due to muscular atrophy from disuse while in bed, and it is my custom in order to avoid this effect to have the patient massaged once daily for the first three days, adding passive motions during the fourth, fifth and sixth days and active, resistant movements for the succeeding days in bed. When cared for in this way the patient can walk about the room as soon as she gets out of bed, experiences little, if any, of the feeling of faintness so commonly complained of, and within a few days is strong enough to go out doors. This plan is in line with the views of our Chairman as expressed before this Section in a paper entitled "Massage and Exercise in the Management of the Puerperium,"[2] and by Howden[3] where he advocates postoperative exercises as a means of preventing hernia. My own use of massage and exercises in puerperal women has been most satisfactory, and after the first time the patients "cry for it."[4]

While we agree, in the main, with Bayard Holmes in the desirability and practicability of "the short narcosis, the short incision and the short stay in bed after ideal operations,"[5] we have lacked the moral courage to get our patient out of bed on the second day after celiotomy, but are firmly convinced that the patient, without elevation of temperature, pulse or respiration, and primary wound union, will derive greater benefit from the operation if the stay in bed is limited to the shortest possible practical time, say seven days or more, as her condition may indicate. Even for a healthy individual, sitting up in bed is a most uncomfortable position and can not be maintained for any length of time, unless the patient can sit cross-legged; I prefer to let her sit up in a rocking chair.

The most distressing complications to patient and surgeon after operation are intestinal distension and acute dilatation of the stomach. Since 1892 I have made use of massage and kneading of the abdomen whenever the accumulation of gas becomes disagreeable, usually within thirty hours after operation, and by this means, after fifteen or twenty minutes, the patient usually expels large quantities of flatus, which relieves the pain and stops the vomiting.[6] As an adjuvant to the stomach tube in the class of cases so graphically described by Herrick[7] as "acute dilatation of the stomach" I have derived much good from massage and kneading,

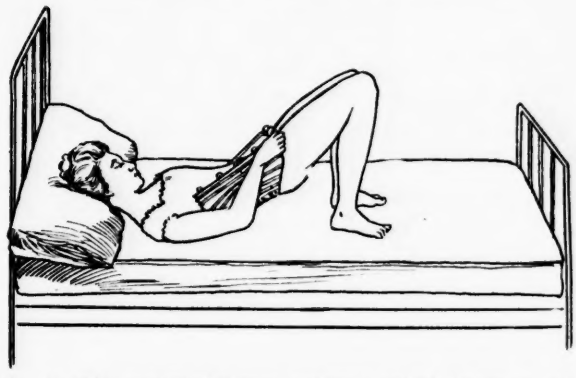


Fig. 4.—The semiopisthotonos posture; patient lying on bed or couch, hips raised, causing viscera to gravitate toward the diaphragm when applying the "abdominal stock" or special corset.

but in spite of all I lost one patient, from this cause, after excision of a small urachal abscess which opened at the umbilicus.

While tympanitic distension is unrelieved I deem it most unwise to add to the discomfort of the patient by administering salts, calomel, etc., by the mouth, preferring to introduce salines or cathartics or soap suds into the rectum to overcome from below the antiperistaltic action of the intestines. At the same time the patients receive only water by mouth until the bowels are relieved. It is often surprising to note how well patients will do on water only.

Enemata are always introduced through a short rectal nozzle, with the patient lying on the *right side*, the hips being raised on a pillow, the vessel or douche bag being slung not more than a foot above the anus. Given in this way, the fluids enter very slowly, cause no irritation, gravitate to the lowest point, the caput coli, and are retained with greater comfort to the patient.

2. THE JOURNAL A. M. A., 1902, vol. xxxi, p. 355.
3. Med. Rec., 1904, vol. lxv, p. 160.
4. Amer. Med., vol. vii, p. 783, 1904.
5. Amer. Med., 1905, vol. x, p. 1025.
6. Mathews: Med. Quarterly, July, 1896.
7. THE JOURNAL A. M. A., 1903, vol. xlvi, p. 923.

LATENT MALARIA?

Delafield, in his lectures to students, calls attention to the manifold varieties of malarial fever met in New York and vicinity. It has been my worrisome experience to meet several instances in which, immediately after operation, the temperature, pulse and respiration shoot up, remit twice daily and are associated with marked abdominal distension, and a very distressing headache, the one feature which disturbs the patient most, as it does not let up. During the remissions the patient's pulse is of good quality, the face and tongue show no signs of sepsis, though there may be some abdominal tenderness, probably due to the distension. This condition continues for some days, with or without vomiting, even after the bowels move and gas has been freely evacuated; and yet, in spite of all, while the patient is very much distressed, she does not look like one who is seriously ill.

Having studied malarial vagaries in person when living in New Jersey, and later noticing the frequence of remittent fever in puerperal patients when at the Sloane maternity and in private obstetric practice, in spite of the absence of demonstrable plasmodia in the blood, and from the clinical fact that the only drug which has given relief is quinin, I look on this post-operative complication as a latent malaria which, owing to the depression following operation, phoenix-like, bursts into a flame, poisons the patient, worries the nurse, makes lunatics of the family, and adds many a gray hair to the surgeon's head.

Following the teaching of my preceptor, Dr. E. S. McClellan, who antedated Koch by twenty-five years, I give 5 or 10 grains, each, of the sulphate of quinin, iron and magnesium with ten minims of sulphuric acid, dilute, in solution, once daily, seven hours before the hour of the highest temperature of the preceding day. The effect is most gratifying to patient and surgeon, as illustrated by the accompanying chart of a patient following laparotomy, for restoration of a retroverted uterus, held down by very thick cord-like bands.

CONVALESCENCE.

Now that the patient is ready to get out of bed, the order has been given for a general tonic, and instructions as to daily calisthenic exercises, etc., have we done our whole duty and provided against a relapse, perhaps return of many of the symptoms, which have been in abeyance during the period of rest in bed? From our standpoint, no. In a paper entitled "Waistbands and Corsets in the Genesis and Treatment of Glenard's Disease"[8] I endeavored to show that the present manner of fastening the clothing and corsets around the waist is the greatest curse to women of the civilized peoples of the world, productive of distension of the lower abdominal wall, distortion of the stomach, displacement of the colon, kidneys, liver, spleen and even the heart in such a large proportion of women as to call for its recognition or exclusion ere we permit any of our patients to resume their ordinary mode of life. This holds good after suture of prolapsed viscera, or pelvic work, especially when the anterior abdominal wall of the woman standing resembles an inverted interrogation mark—so truly pathognomonic of visceroptosis (Fig. 1). This condition is very apt to be overlooked unless the examiner observes, palpates and percusses the abdomen with the patient undressed, standing, and, in order fully to appreciate her condition when dressed, ties a piece of muslin bandage around the waist to imitate as nearly as possible the waistbands when tied (Fig. 1 B). In this way only can we ascertain the real extent of visceral displacement.[9]

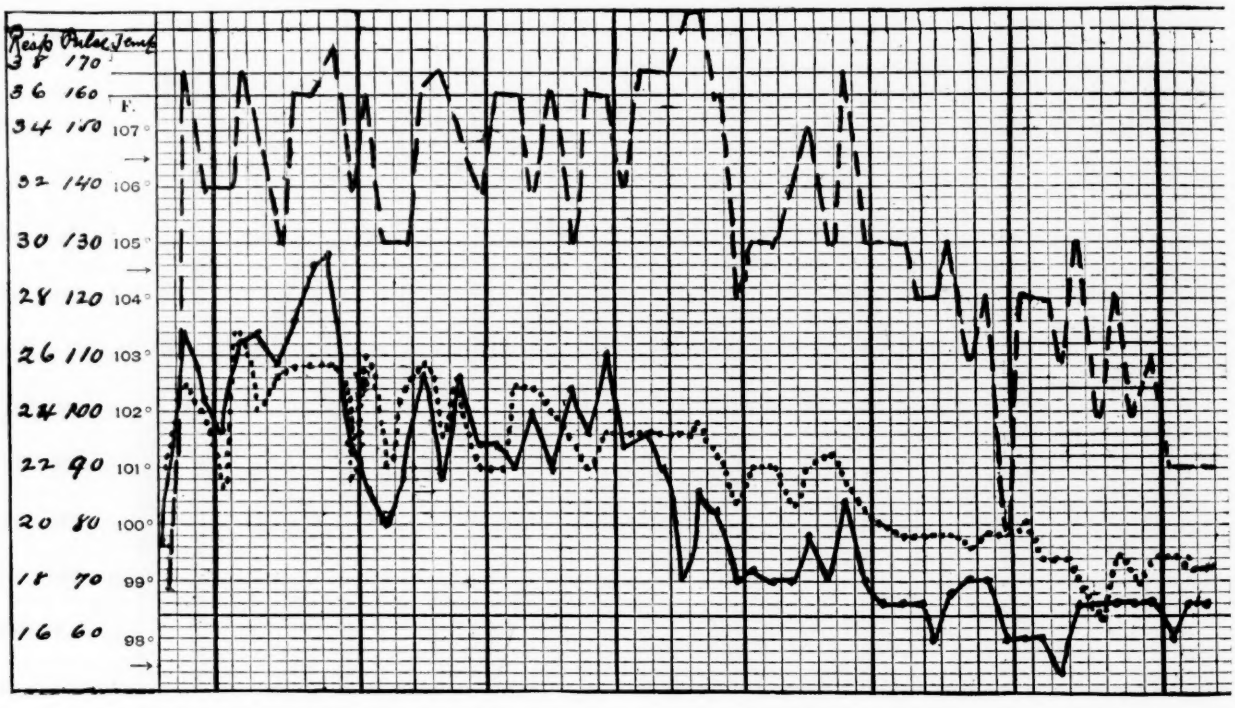


Chart 1.—Respiration ----; Pulse . . . . .; Temperature ————.

In endeavoring to meet the requirements for the relief of these ptoses I make use of the abdominal stock binder, Rose's plaster and a corset of peculiar design.

The Abdominal Stock.—This is made of 18-inch wide unbleached muslin, two yards long, doubled, and is cut to fit each patient by placing the free edges on a level with the mons and marking with a lead pencil the out-

8. Canadian Jour. Med. and Surg., July 1903.

9. "The Symptomatology and Diagnosis of Glenard's Disease," International Clinics, 1904; Fourteenth series.

line shown in Figure 2. The apron-like center piece corresponds to the suprapubic area and curves outward over the iliac crests, thence down to the gluteal fold to form the tongues, "b'" "b," the bands, "c" "c'" running out to the full length of the muslin on either side. At "d" a buttonhole, three inches long, is made, through which to slip the end, "c," after it has been carried around the waist (Fig. 3). Perineal straps of tape threaded through quarter-inch rubber tubing are attached by a loop to the buttons on "b" "b'" and pinned to "a" on the corresponding sides. The pattern was obtained some years ago from a nurse who was unable to tell who was the original designer.

Some patients can put up with the irritation of the Rose's plaster bandage and wear it for a month without undue discomfort and during that time are fitted for the special corset.[10]

Position of Patient.—Before putting on the binder, plaster or corset the patient places herself in the elevated dorsal posture (semiopisthotonos, Fig. 4), rubs the abdominal contents in the direction of the diaphragm, and while in this posture adjusts the garment. When the patient stands up the lax abdominal wall, with the replaced viscera, are supported by the corset and can not prolapse.[11]

THE ADHERENT DILATED STOMACH.

While conducting some investigations on the position of the kidney at the pathologic department of Columbia University, with the kind co-operation of Dr. B. B. Gallaudet, we ran across instances of dilated stomachs, adherent near the pelvic brim by the omentum, colon, appendix, etc., preventing the stomach from contracting and neutralizing any efforts on the part of the physician to relieve the dilatation. The same condition has since been met at operation and on the autopsy table. The diagnosis can be made by placing the patient in the semiopisthotonos posture or on the hands and knees —if the stomach is non-adherent it will gravitate toward the diaphragm and *vice versa.*

In thin patients the stomach will not ascend, as it should do, during inspiration; the succussion note remains below the umbilicus; and the chronicity of the gastritis and malnutrition, without periods of improvement in general health, is a picture we can not fail to recognize.

The treatment of adherent, dilated or prolapsed stomach can only be surgical—freeing adhesions, plus gastroplication, gastropexy, or posterior gastroenterostomy. In one instance, adhesion of the stomach to the left pelvic brim had followed appendicitis. I opened above the umbilicus, expecting to do a gastroenterostomy. The greater curve lay just above the pelvic brim. On separating the adhesions, the patient vomited, the stomach contracted so much that it would have been difficult to pull the small contracted stomach through the wound sufficiently to do an anastomosis. Without any further steps the wound was closed, and during the year past the stomach has never extended below the umbilicus. This patient wears a special corset.

CONCLUSION AND SUMMARY.

In conclusion and summary of these, my personal predilections, I would lay especial stress on the following factors, which, when properly applied in appropriate cases, will oft-times bring success and cure the patient:

1. A most careful consideration of antenatal and postnatal diseases and the chronicity or acuteness of the present condition before deciding to operate or not to operate.

2. The liberal use of water by mouth and rectum before, during and after operation. The free application of tincture of green soap, rubbed into the skin until dry, when preparing the field of operation and the hands of the operator and assistant.

3. Minimum morphin before anesthesia; care that the head is properly elevated, the ether administered by the patient herself in the first stage, and a minimum quantity of ether employed.

4. A reasonably short incision, a reasonably quick operation, a reasonable number of sutures to close the wound, and a reasonable time in bed.

5. After operation the careful prevention of chilling the body; the cautious use of morphin and sedatives; lavage to allay undue vomiting, and colonic massage and kneading for relief of distressing intestinal distension, with continuous rectal irrigation for tympany.

6. To invigorate the tired patient and to prevent muscular atrophy and cardiac weakness, general massage, with passive and active movements daily while in bed and calisthenics when first about.

7. For the prevention of hernia and enteroptosis or support of prolapsed organs apply the abdominal "stock," Rose's plaster bandage, or a special corset, put on while the patient is in the dorsal-inclined posture.

60 West Fifty-sixth street.

10. International Clinics, 1905, Fifteenth series.
11. Nephropexy, Pro. and Con., N.Y. Med. Jour., April 29, 1905.

DISCUSSION.

DR. M. I. ROSENTHAL, Ft. Wayne, Ind., has made it a practice, when the peritoneum is closed, to have the anesthetist wash out the stomach with normal salt solution while the patient is still under profound anesthesia. The patients so treated vomit less frequently and complain less of thirst.

A PLEA FOR THE SCIENTIFIC ADMINISTRATION OF ANESTHETICS.*

JAMES TAYLOE GWATHMEY, M.D.
NEW YORK CITY.

There is no more reason why we should adhere to the drop method of chloroform or the cone method of ether when a better and more exact method is produced than that we should continue to use the "one horse shay" when the automobile is available. Nor is it sensible to continue the foolish custom of allowing the most inexperienced interne to narcotize instead of having a professional anesthetist in every hospital.

Furthermore, because a man has given an anesthetic many times during his hospital service and irregularly afterward, it is no evidence of his ability to do the same thing several years after, with even a reasonable degree of success. The wonderful advancement in all departments of medicine has come from men devoting their exclusive time to some one branch of it, and especially is this true of anesthetics. We are indebted to England, where the professional anesthetist prevails in hospitals as well as in private practice, for all recent progress in the administration of anesthetics. Here in America, where both nitrous oxid gas and ether were first discovered and used, we seem still content to continue what might be called "frontier" or "border" life with the mortality table the same as when anesthetics were first introduced.

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

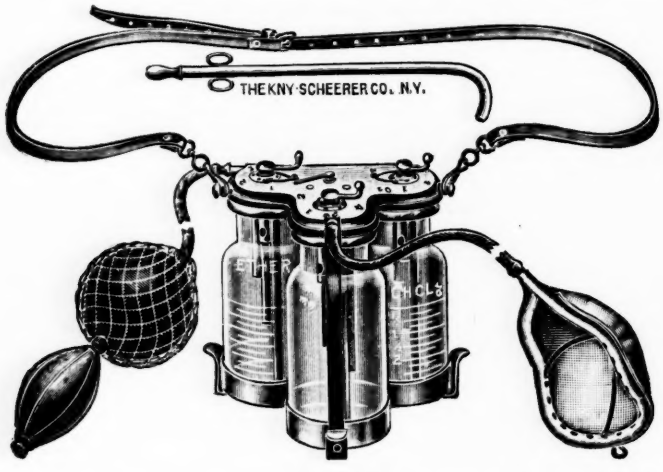
The production of anesthesia, like hunting, billiards, or any other thing in life requiring skill, should fall into the hands of one who is giving himself entirely to that branch and who loves it for its own sake. The ownership of an anesthetic outfit by a physician who has the price does not necessarily qualify him as an expert. Especially is this true if he is attending to the general practice of medicine or some other branch of it and using this subject as a makeshift. To such men the exact method of anesthesia will not appeal.

RECENT PROGRESS.

The English have produced the Harcourt inhaler, giving a maximum 2 per cent. chloroform vapor and a minimum 1/10 per cent. The French have produced the Gigliementi Roth Drager apparatus for the exact administration of known percentages of chloroform and oxygen vapors. The Germans have given us the Braun apparatus for the administration of an attenuated ether vapor to be supplemented with small amounts of chloroform from time to time as indicated. With these object lessons for the scientific administration of anesthetics before me, I have succeeded in producing an apparatus giving a known percentage of chloroform and oxygen (or air) and also an attenuated ether vapor, or any combination of these two drugs.

APPARATUS DESCRIBED.

The apparatus (the successor of the three bottle inhaler) consists of two six ounce bottles, one for chloroform, one for ether. Both bottles are placed on a tin vessel containing thermalite. This "thermalite warmer," if placed in boiling water for three minutes, will stay warm for over one hour and a half. If the heat is to be continued, this can be accomplished by simply taking the stopper out, thus exposing the thermalite to the atmosphere. The liquid now begins to re-crystallize and in turning to a solid again gives off heat for another hour and a half. Or the instrument can be boiled for three minutes, cooled immediately by placing in cold water, and the stored heat turned on at any time needed by taking out the stopper, and thus starting up re-crystallization. The size and the cost of the apparatus are thus reduced nearly one-half. The technic is also much simplified.



The small switches on the top of each bottle are so arranged that chloroform or ether, combined or separately, can be given and in any strength desired. All of the vapor being warmed, it is more respirable, reducing the after effects, and at the same time increasing its safety as regards life. The vapor percentage, when using either oxygen or air, can be increased or decreased, without at the same time increasing or diminishing the anesthetic.

In each of these bottles there are three tubes, varying in length from one that reaches the bottom of the bottle to one that penetrates only the stopper. These tubes represent three degrees of vapor strength, the longest, No. 3, with the mask, has an estimated 1.8 per cent. vapor strength; the shortest, No. 1, representing a very attenuated vapor strength, 0.1 per cent. chloroform. In addition to these degrees, by simply turning a small lever, without removing the mask, the patient gets pure air, or a mixture of oxygen and air.

The percentage varies according to the depth or amount, and also to the temperature of the liquid, the size of the hand bulb, and the pressure with which the air or oxygen is forced through the tubes, either by the hand bellows or from the oxygen tank. It also varies with the tube through which it is passing, the longest tube representing, with the mask, nearly 2 per cent., and the shortest a fractional, or 1/10 per cent. vapor. As the mask is not air tight nor arranged so that the vapor can be compressed, there is no possible danger of getting more than this amount, although it is possible to lighten the anesthetic to any degree desired.

ADMINISTRATION.

If the patient is a strong, vigorous man or an alcoholic, the longest tube is used to get him completely under; then the stop-cock is turned to the second longest, or No. 2. If the lid reflex is still sluggish, the lever may be turned to No. 1. If, now, this reflex gets too active, try the second length or No. 2 tube. By thus working up and down from the shortest to the longest tube, and by also varying the pressure, the patient can be kept between an active lid or swallowing reflex, on the one hand, and a very dull lid reflex on the other. If the patient is an infant or is very weak, only the shortest tube is to be used from the beginning.

The mask is similar to a folding Esmarch mask, the rim of which is hollow and perforated with small holes around the inner margin so as to allow the vapor to escape. It is covered with two to four layers of gauze, over which is placed a piece of oiled silk or rubber tissue. A small opening, the size of a ten-cent piece, is cut in the middle of this gauze, so that, during the induction period, a few drops of chloroform may be added as is sometimes necessary with vigorous alcoholics. There are neither valves nor bag, consequently there is no re-breathing, no unnatural or strained breathing at any time.

This apparatus will not attract those who wish to give a minimum amount of time and thought to this branch of medicine, but it will appeal very strongly to the surgeon who has the highest welfare of his patient at heart. By the administration of cologne during the first minute, or until the mucous membranes become saturated and the patient is breathing regularly, the element of fear is eliminated before the anesthetic is turned on at all, and the very small percentage of deaths from fright will thus be absolutely done away with. The patient is entirely unaware of the attenuated chloroform vapor and sinks into a quiet and natural sleep, with the stages of excitement entirely absent or reduced to a minimum. During the narcosis the disagreeable mucous râle is eliminated, the billowy breathing is absent, neither do we have the quiet and sometimes imperceptible breathing that accompanies chloroform as usually administered, which is so very alarming to the anesthetist.

The patient is barely submerged and the reflexes are just abolished. Thus we may say that the patient is within calling distance at any time. If a severe hemorrhage should occur or shock from any cause take place during the operation, the anesthetic can be quickly eliminated from any part that it might take in producing this state.

The pulse, color and respiration are nearer normal, generally speaking, than with any other method of administration. To administer this attenuated vapor of known percentage successfully, the anesthetist must at all times be on the *qui vive*. He must observe all signs and symptoms and graduate his anesthetic accordingly. To the interne who is in the habit of watching the operation most of the time and at irregular intervals loading up his patient with ether, this narcosis will be a hardship.

The after effects from the warmed-over ether and chloroform vapor in 98 per cent. of the cases are nothing, for the following reasons:

1. The glands of the buccal cavity have not been unduly excited and consequently the nauseating ether saliva is not present.

2. A carbon dioxid poisoning is also absent, as there has been no re-breathing. When the blood has rid itself of the drug, the patient immediately returns to a normal condition. With any closed method we have more or less carbon dioxid in the blood, and ether saliva in the stomach plus the anesthetic to contend with.

3. Acid intoxication and late poisonous effects of anesthetics, as noted by Arthur D. Bevan and Henry Baird Favill,[1] need not be dreaded.

Their article, while exhaustive, shows a lack of appreciation of the subject of anesthesia. In not a single history of all the cases enumerated was the amount or method of giving stated. With the anesthetic heated to the temperature of the blood (100 F.) and with an attenuated vapor of chloroform or ether given, as the case requires, I have no hesitancy in saying that these late effects will be an impossibility.

The percentage of deaths from anesthetics would be materially lessened if surgeons themselves knew a little more of the theory of narcotics. For instance, many surgeons will allow an irregular narcosis (which is always dangerous). Now, if the patient suddenly shows that the reflexes are not entirely abolished, the command may be given to "push the anesthetic." If the anesthetist is inexperienced, he may follow implicitly the surgeon's directions, regardless of the condition of the patient. The patient may now take several long, deep respirations and then hold his breath, and thus invite a fatality if chloroform is being administered.

WARMED CHLOROFORM.

Chloroform should never be administered, even by the drop method, at a normal temperature. If the vapor method is not used, a very simple way is to have a pan of hot water (100 F.) on the anesthetist's table in which to place the chloroform bottle from time to time. The value of warmed-over vapor of ether has been known since 1877, when Dr. Glover invented his portable regulating inhaler, but the value of warmed-over chloroform has not been recognized up to this time. In order to determine the comparative value of chloroform as regards life, when heated to 100 F. and at normal temperature, I recently made a number of experiments conforming to those that I made with oxygen in 1904. In all I killed 43 cats, 17 with the warmed chloroform vapor and 26 with the vapor at the normal temperature. The following table shows the results:

TIME REQUIRED TO KILL CATS WITH CHLOROFORM AND AIR.

Number of the experiment.	Number of minutes required to kill at 100 Fahrenheit.	Number of minutes required to kill at normal temperature.
1	18	4.5
2	57	3
3	26.5	7.5
4	24.5	7
5	15	4
6	16	4
7	15	3.5
8	8	7.5
9	13	9
10	22	5.5
11	12	7
12	17	10
13	21	6
14	25	9
15	27	10
16	17	7.5
17	12	10.5
18	..	10
19	..	10
20	..	17
21	..	16
22	..	13
23	..	16
24	..	11
25	..	12
26	..	12
	17) 346 total.	26) 232.5 total.
	Average 20.35 min.	Average 8.94+ min.

From this table we see that the vapor, when raised to the temperature of the blood, is almost 2½ times as safe as chloroform vapor as usually administered; and is nearly as safe as chloroform and oxygen, and is safer than ether and air.[2] These experiments having been made on animals, it remains to be proved if the same results can be obtained on a human being undergoing a surgical operation. The combination of oxygen and warmed chloroform vapor gives us a close approximate to the ideal anesthetic toward which we are gradually working.

AUTHOR'S THEORY.

As this is the first time in the history of medicine that this comparison, i. e., of warm and cold chloroform vapor, has been made, it may not be out of place to give my own theory as to the above.

It is an acknowledged fact that, in the tropical climates, chloroform is given with less danger to life. In fact, the anesthetic is so volatile that it sometimes becomes necessary to use a more or less closed method. By heating the chloroform to 100 F. we, as nearly as possible, reproduce the conditions at the equator. The vapor is more readily absorbed by the blood, and little or none of the vapor remains in the reserve air in the lungs. With chloroform as ordinarily administered, a certain per cent. of the vapor remains in this reserve air to be warmed over before it is capable of being absorbed by the blood. As long as the vapor remains in the lungs in this way, it is a menace to the life of the patient. This itself would be a sufficient reason for administering a warm vapor in preference to a cold one. My idea is that after this warm vapor gets in the blood it is also more readily given off; whereas, a cold vapor circulates for an indefinite period. In other words, while the chloroform vapor at a higher temperature is more easily absorbed, it is also more easily given off.

We may liken the warm and cold gases in the blood to a bubble of gas, on the one hand, and a water-soaked log on the other. When the warm vapor reaches the alveoli of the lungs it immediately escapes and when the cold chloroform reaches the same place it acts the part

1. THE JOURNAL A. M. A., 1905, Sept. 2 and 9.

2. Gwathmey: Medical Record, Nov. 19, 1904.

of the water-soaked log and is indifferent to the opening. Whether this theory is correct or not, the fact remains that chloroform, heated to the temperature of the blood (100 F.) is more respirable, has less after effects and is also less dangerous to life than chloroform as usually administered.

ADVANTAGES OF METHOD.

The principal advantages of this method over all others are: 1. The administration of known percentages of chloroform or ether, separately or combined, in any desired proportion. If a change from one anesthetic to the other is indicated, this is accomplished quickly.

2. Elimination for rebreathing and carbon dioxid.

3. The ability to maintain the desired level called for by the operation.

THE FUTURE OF ANESTHETICS.

Attaining full surgical anesthesia or analgesia from scopalamin and morphin is unscientific and will never become a routine procedure. But the administration of gr. 1/100 scopalamin and gr. 1/6 morphin one-half hour before the operation and supplementing this by as much of any general pulmonary anesthetic as may be necessary is theoretically correct and clinically safe. This is now the usual method of procedure by some of the attending staff at the General Memorial Hospital in New York City, where they have used this combination over five hundred times with the following results: 1, Surgical anesthesia quickly produced; 2, maintained satisfactorily with a minimum amount of the anesthetic (gas-ether being the usual method); 3, the after-effects in over 90 per cent. of the cases as to nausea and vomiting are all that could be desired. The patient usually sleeps for three or four hours after the operation, but can be aroused at any time.

At the Polyclinic Hospital, New York City, we are giving gr. 5 of chloretone every 15 minutes until 15 grains are taken before the operation, but we have not sufficient data as yet to report definitely. The combination of scopalamin and morphin or chloretone or cocain locally, plus a small amount of some pulmonary anesthetic, will undoubtedly be the anesthetic of the future.

DISCUSSION.

DR. W. S. BRYANT, New York City, said that some of his patients had been admirably anesthetized by Dr. Gwathmey. He thinks the amount of anesthetic given was less than with any other method he has seen used and the supply of oxygen more abundant. This accounts for the surprisingly slight disagreeable effects of the anesthetic. He has not seen any bad results from the method, either with chloroform or ether or a combination of the two. He thinks that this method of giving vapor, and possibly warm vapor, would solve many difficulties in anesthetizing patients whose surgical treatment is seriously handicapped by some general disease.

DR. R. C. MYLES, New York City, said that this subject has worried and annoyed him more than operations on the throat. Whether he has an expert anesthetist or not, he never can dissociate himself from the responsibility. Unfortunately statistics can not be obtained. Those who have lost patients under anesthesia do not give the statistics for publication; they are perfectly willing to confer with one another on the subject, but not with the profession at large in the way of publication. He has frequently asked surgeons in different parts of the United States as to deaths from anesthesia, and it is rarely the case that they have not had a fatal accident, but he does not believe that 5 per cent. are reported. So the fatality is far beyond what the literature gives. Since Dr. Gwathmey has been carrying out this method, Dr. Myles has been particularly fascinated with it and has had his assistance a great many times. In mastoid operations, especially in cases involving intracranial structures, taking one or two hours, it has been ideal. In throat cases it has nearly always acted well. Dr. Myles is opposed to chloroform. He referred to one of his own cases which Dr. Gwathmey mentioned, that of a young girl 8 or 10 years old. She was lying on the table with her head over the side and was doing well, when he used scissors to sever the mucous membrane that covers the anterior part of the faucial tonsil; it was a case of submerged tonsils deeply embedded. He made two nicks and noticed an instant cessation of everything that tends to life: eyeballs rolled up, pupils enlarged, and all the phenomena of death were apparent. She gasped and stopped breathing. He grasped her by the legs and held her straight in the air while Dr. Gwathmey used artificial respiration. It seemed a long time, and three or four times he thought there was no use in keeping it up, but Dr. Gwathmey made pressure on the chest and kept her breathing in and out, until finally she gasped and recovered. Nothing but activity caused this patient's recovery. The operation was continued, the tonsils and adenoids were removed, and the patient recovered from the operation. These experiences which happen so suddenly with chloroform in throat operations are due, he believes, to some disturbance of the respiratory center and caused by the surgeon's manipulations. He does not think that they are due to the lymphatics. There is some stimulation or activity caused by incising the throat.

DR. L. A. COFFIN, New York City, raised the question whether or not warm ether or warm chloroform vapor can be given. It seems to him that by this method of heating the ether or chloroform is caused to vaporize more rapidly, but that the vapor is of the same temperature. The heat becomes latent heat. The beauty of the method, it seems to him, is in the graduated and certain amount of vapor, of either the ether or chloroform.

DR. W. E. CASSELBERRY, Chicago, said he experimented in former years in giving nitrous oxid with oxygen and made a preliminary report, but gave it up on account of the complicated technic. He asked whether in the method mentioned by Dr. Sherman its administration can be interrupted for different stages of a tonsil or adenoid operation, without the patient's coming out from the anesthetic in the course of a few seconds. In that operation an interrupted administration is a necessity. Concerning chloroform, he emphasized that the safest way to anesthetize for tonsil and adenoid operations is not to give chloroform at all, but to substitute ether for it. Recently, for another purpose, he had occasion to look through his records of private cases and found from 480 tonsil and adenoid operations, a series of 160 cases anesthetized by ether satisfactorily to the operator and to the patient, with no fatality and no cause for anxiety beyond the usual sense of responsibility which pertains to the use of any anesthetic. He said that, as regards this new apparatus, it is beautiful to behold and no doubt works perfectly in the hands of Dr. Gwathmey, but he has the same objection to it as to many other complicated forms of apparatus. It contains screws, valves and a lot of rubber tubing; the screws will rust, the tubing degenerate and the valves stick or leak at critical moments. As long as ether can be poured and chloroform dropped out of a bottle on to an ordinary inhaler it will take long to introduce complicated mechanical devices for this purpose.

DR. C. M. ROBERTSON, Chicago, said he also is afraid of chloroform anesthesia, although he perhaps would venture to use this method. He decided against chloroform because of operating after two deaths in the hospital, his operation almost causing a third. He has not had an actual death, but pretty nearly so. He gives ethyl chlorid gas in a manner that seems almost ideal. The gas is put up in metal containers so that the heat of the hand generates the gas in the tube. All that is required in giving it to people who can not breathe through the nose is a cheap face mask. After the patient is anesthetized a nasal tube is put in the nostril through which the anesthetic is given continuously. He has used it for the last eight months in private and hospital practice with no bad results, except in one patient who could not breathe on account of having the head thrown back too far. There is no cyanosis with this method of anesthesia, the heart is not affected at all, nor is the respiration, and it seems better

than any form of chloroform he has seen. The trouble with ether is, that following some operations, tonsillectomy, for instance, there is a possibility of purging which is likely to start hemorrhage, and that is an objectionable feature.

DR. M. H. CRYER, Philadelphia, spoke in regard to the use of nitrous oxid gas in combination with oxygen. Sir Frederick Hewitt, of London, first devised an apparatus for making this combination and used it very successfully. In 1904 Dr. Cryer brought one of his apparatus to this country and had it somewhat modified and at the present time it is in general use throughout the United States. It is often used to carry the patient into a state of anesthesia before the administration of ether.

DR. E. F. INGALS, Chicago, said that he has used chloroform in these operations several hundred times, and has seen deaths from chloroform, but never from these operations. Nevertheless, he is not so free in using chloroform as would be supposed from the chairman having called on him in its defense. Many times lately he has given nitrous oxid gas and followed it with ether. During his practice he had seen several cases in which chloroform acted badly and he believes that it will have to be abandoned in most of these operations.

DR. J. T. GWATHMEY, New York City, said that nitrous oxid and oxygen gas is unquestionably the safest anesthetic in the world; anybody studying the subject clinically and theoretically knows that. The only question is that so far they have not been able to use it. Dr. Hewitt acknowledges that it is only applicable to certain cases and on that account has given it up as a routine procedure. Dr. Gwathmey said that his own method comes as near nitrous oxid and oxygen gas as anything can. The reflexes are barely abolished, the patient is just under, and although given ether continuously, in the majority of cases there is no nausea, or very little. In regard to the length of time it takes the patient to come out of the anesthetic, in a case not long ago at one of the largest hospitals in New York, the operation lasted nearly five hours. The anesthetic was given by this method and fifteen minutes after the operation was completed the patient was out and talking normally, without any nausea or vomiting. For adenoid and tonsil operations in giving ether there is nothing better than this method. Anesthesia is a little deeper than with nitrous oxid and oxygen gas.

MEDICAL SPECIALISM, WITH ESPECIAL REFERENCE TO PROCTOLOGY.*

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THE GENERAL PRACTITIONER AND THE SPECIALIST.

In this age of commercialism the struggle for existence is of the keenest. This condition exists in both the business world and in professional life, but especially so in the latter. Is it strange, therefore, that the general medical practitioner looks in awe and wonder at the growth of the specialist and the multiplication of the specialties and asks himself: What is to become of the family doctor? Or: Has my position become that merely of an intelligence office, where the general public can obtain information as to suitable specialists for the treatment of eye, ear, nose, throat, stomach, heart, lung, kidney, liver, or other troubles?

Assuming, for the purpose of argument, that the objections urged against specialism in medicine are well founded, what would be the result if it were possible to abolish the specialist? Would the best interest of medicine thereby be conserved? Would the general practitioner, in the multiplicity of diseases coming under his notice, be enabled to study the individual characteristics and phases of each complaint with that nicety, care and distinction necessary to permit him to draw conclusions and deductions that would enhance the progress of medicine to the same extent as under existing circumstances? Would the health of the public be cared for as well under such a régime? I firmly believe that no fair-minded person could give other than a negative reply to each of these questions. If this be admitted, then, the fact exists that specialists are needed and that specialism in the practice of medicine will grow with the requirements of existing or of future needs and conditions.

A well-known Philadelphia physician was testifying in one of the local courts as an expert. He was asked if he were a specialist, to which he replied: "Thank God, no." When asked what he called himself, he replied: "A general practitioner." When asked to explain to the judge and jury the difference between a specialist and a general practitioner, he replied that "it took about a dozen specialists to make one all-round general practitioner of medicine." As a piece of witticism these remarks could not fail of appreciation, but as a statement of fact they hardly would be seriously entertained by any one.

THE IDEAL SPECIALIST.

It is true that the so-called specialist, who immediately after graduation attempts to pose as an expert in any line of medical practice, will sooner or later bring disgrace on himself and prove a discredit to the profession at large. The same remarks apply with equal force to the practitioner who, after some years of general work, attends a postgraduate course for six weeks or thereabouts and then deems himself a full-fledged specialist in the line of work to which his attention has been directed.

My opinion of the ideal specialist is one who, on graduation, serves a full-term residency in some general hospital in one of our large cities; then takes up the general practice of his profession with some more or less definite idea that at some time in the future, when his finances and acquaintanceship both among the profession and the laity are sufficient to warrant the step, he will take up whatever special line of work either his own liking dictates or is indicated by the course of events which shape the destiny of most men. From five to ten years spent in general practice is none too long for the average individual. During that time as much attention as is possible should be given to the study of the diseases to which it is hoped to devote more or less exclusive attention later. When it is possible, associations should be formed with a specialist, in the desired line, having a hospital position; where as an assistant, much experience may be gained and practical work done. After the proper length of time has been spent in gaining the required knowledge and experience in the practice of medicine, in its broadest sense, the individual, desirous of specializing his work, is prepared to take up the requisite postgraduate instruction. At least a year's time should be devoted to this work. From half to three-quarters of this period may be spent in colleges in this country and the remainder may be employed abroad.

To the student of proctology I would advise a division of time, so arranged as to enable him to spend a couple of months in each of three or four of the teaching centers of this country. In this manner not only is a

* President's Address at the Eighth Annual Meeting of the American Proctologic Society, held in Boston, June 5-6, 1906.

variety of work seen, but also the various clinicians with whom he comes in contact impress on him their individuality both in operative technic and treatment.

NEED OF A KNOWLEDGE OF THE SPECIALTIES.

The foregoing remarks demonstrate that the profession of medicine and the public welfare are materially benefited by having in the community such practitioners who, at the proper time of their professional career, devote their entire time and attention to the study and treatment of some particular portion of the human economy. It is only within recent years that our medical colleges have appreciated the importance of students having at least a rudimentary knowledge of the specialties, such as ophthalmology, otology, laryngology and dermatology, and have required an examination in these branches. Those of us who graduated fifteen or twenty years ago can recall the meager attendance of students to these clinics at all times, and in the latter half of the term the professor considered himself, indeed, fortunate if he could secure an attendance in the amphitheater of a half-dozen men.

In connection with this teaching of the specialties in our undergraduate colleges I would make two comments: First, that the teaching should be done by specialists, and, second, that the teacher should not exact of the student the same profound knowledge of such special subjects as is required for the major branches.

PROPER RELATIONS BETWEEN SPECIALISTS AND GENERAL PRACTITIONERS.

I will now consider the apparent antagonism on the part of some general practitioners toward the specialist. Is this antagonism justifiable? Under certain circumstances the answer must be given in the affirmative. There is just cause for complaint on the part of the general practitioner when the specialist exceeds his authority in treating a patient for any trouble other than that for which he was referred. Furthermore, one specialist has no right to refer a patient to another specialist without first consulting the family physician. Another cause for grievance and the occasion of a drifting apart of the general and the special practitioner is that the public have been educated to seek advice and treatment of a specialist when in their judgment their physical needs require attention, and they do this without even consulting their family physician. It is true that the specialist may with propriety treat such patients and ignore the family physician; but is such a course productive of the cordial relationship that should exist between all honorable and regular practitioners of medicine? I think not. When a patient presents himself at the office of a specialist, without an introduction from his physician, one of the first questions that should be asked is, "Who referred you?" If it be some one other than the family physician, the next inquiry should be, "Who is your physician?" This should be entered with the patient's history in the proper place, and with the patient's consent, as soon as possible thereafter a note should be sent to the physician stating that such and such a person has been seen and examined, with a report of the facts ascertained. Furthermore, any sugestions regarding constitutional treatment should be made to the family physician and left for him to prescribe. If this course were followed by all specialists a much more cordial fellowship would soon be recognizable within the rank and file of our profession and a large part of the enmity now evinced by the general practitioner toward the growth of specialism would be forever dissipated.

Viewed from my standpoint, the progress of specialism does the general practitioner much more good than harm. A single example will have to suffice as an illustration, for time will not permit a thorough consideration of all the features of the subject which would be in order in an extended discussion of the matter. Take, for instance, the subject in which the members of this society are chiefly interested. Each individual composing the organization comes into daily contact with numerous patients afflicted with some ailment of the alimentary tract, more particularly of that portion of the lower bowel beginning at the sigmoid flexure and terminating at the anus. At each annual meeting the individual experiences of one and all of us are given concerning the results obtained from various methods of treatment; original or more extended observations are recorded regarding the pathology, symptomatology, diagnosis and prognosis of the different rectal diseases; instruments are shown of recent device; new operative procedures are described, and any additional information worthy of record is detailed regarding well-known operations. All this material as presented by the individual is subjected during its recital to the closest scrutiny by the members collectively, and then is discussed in a frank and fearless manner by the leading proctologists of this country, with but one natural result: the speedy separation of the chaff from the wheat.

At this point some one may say that all this is true, but what has it to do with indicating the benefits, if any, which accrue to the general practitioner from the growth of specialism? In the first place, all our sessions are open to any members of the medical profession, except that small portion of time which is devoted exclusively to business pertaining to routine matters, necessarily of interest only to members of the society, so that any one of the profession may attend our meetings and freely partake of the bounteous repast of knowledge which there awaits the hungry seeker eager for enlightenment on things proctologic.

Furthermore, those unable to attend the meetings have the opportunity of reading in the medical journals the various papers read before the society, as well as a synopsis of the discussions pertaining thereto. In this way the general practitioner, if he so desires, may fit himself according to his individual capacity properly to diagnose and to treat diseases of the rectum, even to the performance of operative measures. Thus the specialist is largely of benefit to the general practitioner without deriving or seeking any direct personal gain.

Let me shift the scene for awhile and express my views briefly as a specialist on the topic, What should be the attitude of the general practitioner toward the reference of cases and consultation with specialists? This is a broad subject, but the question can be answered, somewhat tersely, it is true, by saying: By acting honestly to the inner conviction of what is right to one's own interest and at the same time just to the patient's welfare. I am glad to say that there are many men whose professional careers are conducted on this principle, but what of the large number who are not animated by such motives? These latter individuals perform major operations with little or no training in surgical work and with a less knowledge of the risks involved to human life. If the patient lives, their egotism is increased and their self-importance and esteem made greater. When a contrary result ensues there is no lessening of the personal vanity, but the death is attributed to natural causes, which in point of

fact it is, but not in the sense of the ordinary acceptance of that term.

These remarks are made not because they are agreeable or from any desire to utter disagreeable things, but as they are facts they seem essential as a sort of preface to what I am now about to state. These same men who so recklessly perform almost all the operations embodied in the surgical field, and who are never known to require a consultation in a purely medical case, unless the patient is at death's door or is so sick that the patient's family becomes frightened, never attempt the removal of a cataract, and when they have a case of a fractured bone hasten to call in assistance. Why? The loss of an eye or an imperfectly set bone, as a rule, does not kill a patient, but it does prove a lasting monument of the lack of a medical man's knowledge, ability and skill.

It is true that in the selection of the operation for the extraction of a cataract I may be accused of using a very poor illustration to emphasize the point made, for it is well known that to-day even the most skilled general surgeon refers such patients to the ophthalmologist. Nevertheless, my object is thereby attained of pointing out a condition of affairs which is deplorable and should not exist.

CONCLUDING REMARKS.

In conclusion permit me to offer a few words of caution and advice, which seem suitable for presentation and consideration in an address of this character. In the first place, let us be considerate of the errors in diagnosis made by others which opportunity happens to reveal to us. No one is infallible. The practitioner who never makes a mistake is either ignorant of its occurrence or else his practice is so limited that he has little opportunity to err. A shrug of the shoulder or an elevation of the brow of a physician being consulted may convey to a patient as much condemnation of another physician's former treatment or diagnosis as though the harshest language had actually been used; and, finally, we must not rush into print with articles of a laudatory character, in which, too often, unstinted praise and unmerited recommendation is given to some new drug or novel method of treatment without having had ample experience to justify the same. Similar remarks are likewise applicable to those who publish a description of some newly devised operation without having taken the necessary time to test its merits, much less its demerits.

The avoidance of these evils, for such we know them to be, will save much unnecessary confusion in the minds of the readers of our medical journals, who to-day see statements made to this or that effect which to-morrow are contradicted.

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SURGICAL ASPECTS OF TUBERCULOSIS.*

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By the above title we understand tuberculosis as it presents itself to the surgeon, to that division of the medical body which busies itself with the knife, the brace, the plaster bandage, the rubber constrictor, in other words tuberculosis accessible to external means of therapeusis.

EXTENT OF THE SURGEON'S DOMAIN.

How broad is the field which we are about to survey? What promise does it hold out of opportunity for rendering services of value, for doing work satisfactory to the active and to the passive party?

A brief view of some figures bearing on this matter may be of some interest. During the decennium, 1894 to 1903, we find that in the Charity Hospital of New Orleans the prevalence of the pulmonary form, commonly accepted as medical in its aspect, was 4.24 per cent. (42 in 1,000) of the total number of patients admitted for the whites, 9.001 per cent. (90 in 1,000) for the colored. During the same period the prevalence of surgical forms of tuberculosis was 2.92 per cent. (29 per 1,000) for the white, 3.229 per cent. (32 per 1,000) for the colored.[1] These figures make the ratio of surgical to medical tuberculosis cases about 1 to 1.5 for the white, about 1 to 2.8 for the colored. The greater preponderance of pulmonary cases in the colored may be accounted for by the fact that the members of this race suffering from the pulmonary disease come to the hospital in large numbers to spend their last days on earth, while they seem less inclined to come for the less fatal, though more disabling, local lesions.

In Ward 1 of the same hospital, a portion of the service of Dr. R. Matas, professor of surgery in the Medical Department of the Tulane University of Louisiana, of 149 surgical cases admitted during the six months, October, 1903, to March, 1904, 17 (nearly 12 per cent.) were tuberculous in character. These figures, taken from the reports of a general hospital admitting patients regardless of racial considerations or of any considerations other than those of public health, may be assumed to be fairly representative of the conditions existing in this section of the country.

When we come to consider the tissues, apparatus, regions and organs presenting work for the surgeon, it seems easier to enumerate the organs not affording opportunity for surgical intervention than to give the long list of those which do. Of the connective tissues which form the framework of the human body every element comes within the scope of our sphere of interest and action, fascia, adipose tissues, cartilage, bone, muscles, tendon-sheaths. The brain and its meninges, the coverings of the spinal cord, the cerebrospinal nerves, the organs of special sense belong in our domain. The pericardium, the blood vessels and, of special importance, the lymphatics and lymphatic glands are amenable to surgical intervention. The serous, synovial and mucous membranes do not escape our attention, nor are the secreting glands foreign to the subject. The digestive apparatus presents the lip, tongue, palate, pharynx, stomach, small intestines, colon, appendix and liver; the respiratory apparatus, the larynx, trachea and pleura; the genitourinary apparatus is ours in its entire extent, including kidney, ureter, bladder, urethra, prostate, vesicles, cord, testis, vulva, vagina, uterus, tubes, ovaries, mammary gland. Every region presents some lesions for which surgical therapeutics of one kind or another are indicated. To sum up, one may say that every portion of the body is affected with tuberculosis of what we may call the surgical type with the exception of the heart, the spinal cord, the lungs and bronchi, the spleen and the pancreas. Even these organs are not all free from surgical intervention for tuberculosis, as lit-

* Read before the Mississippi State Medical Association, April, 1906.

1. Gessner, Hermann B.: "Importance of Surgical Tuberculosis to the General Practitioner," New Orleans Med. and Surg. Jour., September, 1904.

erature records the successful draining of pulmonary cavities of tuberculous origin. A more thorough review of the subject might show that others of the exceptions given should be included in our list of organs requiring surgical intervention for tuberculosis.

It must not be forgotten in taking this survey of the field that some of the tissues mentioned are but rarely involved. Up to a recent period the peripheral nerves have been thought to be immune. During the past winter Professor Matas has had occasion to bring before the medical class of Tulane a case of ulnar nerve tuberculosis, besides encountering a similar case in his private practice. Again, the stomach is rarely the seat of tuberculous lesions, its secretion apparently protecting it against the local development of tubercle bacilli. The pericardium is not frequently the object of our attentions, though I have had the opportunity of tapping this sac for a serous effusion secondary to a pleural exudate, withdrawing two ounces on one and seven ounces on another occasion.

The conclusion to which we finally come is that there is not a region of the body, not a tissue nor any organ, which we may say positively can not be the seat of tuberculosis, and further that with improved technic there is scarcely a lesion that can be considered outside the domain of the surgeon. The rare tuberculous lesions of the endocardium are safe from his reach, as would be similar lesions of the large vessels, did they occur primarily. But anything short of these impossible heights may be reached by persistent effort. Let the surgeon, therefore, keep tuberculosis ever before him as a possibility lest he have the humiliating experience of attempting the removal of a lipoma from the back and finding a cold abscess or discovering that a supposed sebaceous cyst over the eyebrow is in reality a tuberculous collection originating from the dura and perforating the frontal.

DIAGNOSIS AND PROGNOSIS.

Of diagnosis I shall say little, this aspect having been pretty well crystallized in the literature. The slow onset, the painless, afebrile character of the lesion, combined with the information derived from the use of the exploring needle and the results of examination of the fluid by staining, culture and inoculation, make the recognition of tuberculous diseases in most cases a matter of only ordinary difficulty. The use of tuberculin, about which much has been written pro and con, has, in my hands, proved serviceable for clearing up diagnoses. Care must be taken to avoid excessive doses, the limits recommended by the manufacturer being observed.

In regard to prognosis I must declare myself frankly optimistic. Given a patient with a single lesion, offering good opportunity for radical extirpation, and the chances of ultimate recovery are excellent. Autopsy records show that, with extensive local trouble amenable to surgical intervention, there may be perfectly sound viscera, the disease in such instances progressing by continuity and contiguity only without metastatic deposits through the lymph or blood channels. Just as the prognosis of pulmonary tuberculosis has improved under modern methods of early diagnosis and prompt treatment, so with the surgical side of the disease, which, being more accessible, ought to be even more favorable for recovery.

TREATMENT.

The treatment of surgical tuberculosis is so well known that I will not dwell on it at length. Rest, general and local, the latter secured by proper methods of immobilization, aspiration, injection, excision are all too familiar to require being expatiated on. I pause only to impress on you the desirability of making a clean sweep, of practicing radical excision in all cases in which this is feasible, in preference to employing the slower method of aspiration and injection. I refer, of course, to those cases in which the disease has progressed to the point of destruction of tissue, to caseation and liquefaction.

I should like to call attention to the Bier method of congestion, which, though not new, has recently been taken up with renewed vigor. In the Charity Hospital service of Professor Rudolph Matas, the treatment has been applied of late to diseased joints with very satisfactory results. By no means should we slight the improvement of patients' general health by the well-known hygienic means of sunlight and fresh air, with properly directed exercise. Nor should we overlook the specific medication by means of culture and serum preparations, one of which, let us hope, will some day prove to be the long-sought-for boon. The use of the hygienic means referred to, together with the watery extract of tubercle bacilli, has enabled our Louisiana Tuberculosis Sanitarium, conducted by Dr. W. J. Durel at Covington, La., to get excellent results and establish a high reputation.

In summing up, we arrive at these conclusions:

1. Tuberculosis is of interest to the surgeon because it affects practically every region of the body with sufficient frequency to require that he be ever on the lookout for it.

2. Early recognized and promptly treated, the surgical form is as amenable to treatment as any class of lesions with which we are confronted.

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TESTIMONY AND EVIDENCE IN MEDICINE.

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I have deviated somewhat from the custom of my predecessors of presenting some purely surgical subject for your consideration in order to take up a matter of a more abstract nature, yet one which I believe to be of the greatest practical importance, and one too often neglected by most physicians. I refer to the question of testimony and evidence in medicine.

In the legal profession the questions of testimony and evidence, in so far as they relate to human affairs, have been very thoroughly studied, and more or less fixed rules governing them have been adopted. The value of testimony and the weight to be attached to evidence in the formation of conclusions are all elaborately dealt with, but the physician dealing habitually with questions of life and death too often fails to apply the most common rules of logic to his reasoning, with the result that his deductions are often entirely unwarranted by the premises, and therefore frequently erroneous. Many of the errors of judgment made by physicians will be found on analysis to be due not so much to an actual lack of knowledge of the subject as to the fact that they are based on testimony that is unreliable and evidence that is insufficient.

Notwithstanding the fact that their daily life is made up of listening to testimony and to the weighing of evidence, yet the majority of physicians fail absolutely to comprehend the meaning of these two terms, and to understand wherein the one differs from the other.

WHAT IS TESTIMONY?

Testimony is that which is derived from an individual who in medicine is usually the patient and corresponds to what is called the history of the case, as given by the patient or some other person. Belief in human testimony is a fundamental principle of our moral nature, and in law is the very basis of evidence. An instinctive leaning or propensity to speak the truth is inborn in our nature, and by Reid, in his "Inquiry Into the Human Mind," this is recognized as the "principle of veracity."

The very nature of the case in all times and in all courts of law has given to the communications between the patient and the physician, from whom he seeks relief from his sufferings, the highest degree of credibility, yet every physician of experience knows that the testimony of the patient is but too often in the highest degree unreliable. This is not a denial of the principle of veracity, but an attempt to differentiate sharply between that which is truthfully told and the truth of that which is told. A patient may never be so truthful and relate nothing but what he believes to be the truth, but the physician must discriminate very carefully between what the patient believes to be true and the facts as they really exist.

There are many reasons why a truthful statement by the patient may not state the truth. In the first place the majority of individuals are very poor observers, and particularly so when it concerns a matter about which they know but little. Imperfect observation or perceptions leads to erroneous concepts, and although a patient's statement may truthfully depict his perceptions and conceptions, if these be erroneous his testimony contains untruths. Aside then from those patients who are mentally irresponsible, from those who wilfully attempt to deceive, and from those who are unconsciously biased on account of contingent personal benefits at stake, which will be considered later, the physician must recognize the possibility of error in the testimony of those who have every reason and intention to be honest.

Therefore, in receiving knowledge of facts from the testimony of others, one should be influenced by their accordance with facts previously known or believed, and this constitutes what is termed their probability; but in being influenced one must guard against two sources of error, namely: unbounded credulity and unyielding skepticism, for the former is the attribute of a weak mind, which seldom thinks or reasons, while the latter belongs to those who find nothing probable beyond their own limited field of observation and experience. That those things which accord with one's own observations are more readily believed than those which do not, is natural, and thus the value of a wide experience becomes evident, for, as Abercombie has well said:

> **The progress in knowledge is not confined in its results to the mere facts which we acquire, but has influence in enlarging the mind for the further reception of truth, and sets it free from prejudice which influences men whose minds are limited by a narrow field of observation.**

EVIDENCE: LEGAL AND SCIENTIFIC.

Testimony and evidence are by no means the same. There may be a great deal of testimony yet very little evidence. By evidence is meant "the means by which any alleged matter of fact, the truth of which is submitted to investigation, is established or disproved." This is the legal definition and indicates its origin by containing hidden within it a description of the method of procedure in law. An "alleged matter of fact" is presented in the form of a conclusion which is assumed to be true, and an attempt is then made to bring forward sufficient evidence in support of the assumed facts as will ordinarily satisfy an unprejudiced mind beyond reasonable doubt of their truth. In other words, the conclusion is presented first and the evidence made to fit the conclusion. While this method of procedure may be applicable to the ordinary affairs of men it is most fallacious when applied to medicine or other natural phenomena.

A definition which conveys a better idea of the meaning of evidence, as applied to medicine or the investigation of natural phenomena is, that evidence is any fact which, when presented to the mind, effects or tends to effect a conviction concerning the existence of some other fact. This does not presuppose nor assume any certain conclusion, but leaves the conclusion to be that which the evidence warrants. The value of the evidence in establishing the facts as such in any particular case varies greatly.

PROOF.

When the evidence is positive, direct and complete it amounts to proof. Proof, therefore, is not synonymous with evidence, for the latter is the means or medium by which truth is established, while the former is the effect or the end result of evidence. The evidence may be sufficient to amount to proof, when a conclusion is warranted, or it may be so insufficient as to render any conclusion absolutely unjustifiable. It is the natural tendency of the untrained mind to reach conclusions on entirely insufficient evidence, while the trained mind will recognize consistency and truth when a less experienced one will disbelieve.

The ability to deduce a correct conclusion does not depend entirely on the known terms of the premises, but also on the readiness with which one appreciates or comprehends the equality or inequality, or the similarity or dissimilarity, between the known and the inferred terms. When the savage, by observing a few signs, the mere existence of which is almost invisible to the untrained eye, is able to assert with certainty that a definite number of white men known as soldiers were present at that particular spot at a certain definite time past, and that they came from one direction and departed in another, he is displaying the most perfect logic possible, because from a few known facts he is correctly inferring a large number of unknown facts, the latter being necessary dependencies of the former.

THE PHYSICIAN AND LOGIC.

Logic is the most abstract of objective sciences, and treats of the necessary dependencies of things. The average physician knows too little about logic. He is not trained in giving to evidence its proper weight; he does not sufficiently recognize that there must be equality between the terms of the conclusion and those of the premises, and that in just so much as these terms deviate from perfect equality does the conclusion lack in certainty or inevitability. In mathematics the conclusions are positive and absolute, but in medicine it is very rarely that they obtain such a high degree of certainty. It should be the duty of the physician, however, to give to his conclusions the highest degree of probability possible under the circumstances, and this can only be done by strictly applying to his work the sound rules and principles of logic. A large part of a physician's life is spent in listening to testimony, yet how seldom does he

ask himself, How much credence should be given to these statements? How much of this or that is true, and how much is false, not false in the sense of willful deception, but false for the reasons already mentioned, unintentional errors?

PRESUMPTIVE EVIDENCE.

The fact that the patient comes to the physician suffering from some ailment from which he desires relief, and that this can best be obtained by acquainting him with all the circumstances connected with the case, is presumptive evidence of the truthfulness of his statements. Yet it is only a presumption.

In law two kinds of presumptions are recognized, namely: Conclusive presumptions, or those which do not admit of proof to the contrary and which include a variety of conditions not pertinent to our subject; and disputable presumptions, wherein one condition is usually found by experience to accompany or succeed the other, so that when the one is recognized as present the other may be presumed to exist. The relations between the two, however, is not an absolute or necessary one, and the presumption thus raised can be held only until some proof is given in rebuttal.

Most of the testimony of patients is presumptive evidence of the disputable variety, and, while the presumption is usually that the statements made are true, this is by no means always the case. For instance, in the case of a young unmarried woman with suppression of menstruation and an enlarging abdomen, experience has shown that the incentive to mislead is so great that the presumption is entirely in favor of the testimony being false. Also in that large class of personal-injury cases in which monetary compensation is sought, a large experience involving thousands of cases has convinced me beyond a doubt that much of the testimony in this class of cases is presumptively untrue, and that it can only be believed when substantiated by correlated facts. These conditions should be recognized by the physician in order not to be misled by statements which he receives from the patient.

It is a well-recognized principle of the law of evidence that the facts from which an inference is to be drawn must be proved by direct evidence and not to be presumed or inferred. In other words, a conclusion can not be legitimately based on presumptions or inferences. A violation of this principle by the physician is frequently seen, and numerous errors in the way of faulty conclusions are the result.

AN ILLUSTRATION AND ITS ANALYSIS.

How an erroneous conclusion may be formed from inferences is shown by the following example from actual experience: A man meets with an accident, fracturing his leg. After the usual period of confinement to bed he gets around on crutches and then without them, and makes a recovery in the average time, but although he recovers from the fracture he does not feel that everything is just right with him, and in two or three months after getting around he consults a physician, who discovers he has tabes. He states that previous to the accident he was perfectly well and did not notice any symptoms until after he began getting around. The circumstances here of a history of previous good health, of an accident producing a distinct physical injury with the appearance subsequently of tabes, lead to the conclusion that the tabes is the direct result of the injury.

Let us analyze this case, which is a very common one in principle, and see if the conclusion is warranted by the evidence. The first point to be considered is the patient's statement that he was in good health and showed no symptoms of tabes previously to the injury. He may even show that he had been accepted for life insurance after having passed a satisfactory medical examination but a short time before he was injured. Granting that the patient is perfectly honest and states only what he believes to be true, how much value should be placed on this statement as evidence? Has it the value of presumptive evidence, or, in other words, is it in all probability a statement of the facts? I claim that it is not, and for the following reasons:

Tabes is frequently extremely slow in its onset, and its earliest manifestations are so insidious as to be unrecognized by the patient, for the reason that they may give rise to no subjective disturbances whatsoever. In fact it is very probable that the earliest manifestations of tabes are only recognizable objectively, and by one who is perfectly familiar with them as well as with the methods of eliciting them. In any case, therefore, of evident tabes, the patient's statement that certain manifestations were not present at any reasonable time antecedent to the event in question, can have very little or no weight, as evidence. In fact, it is highly probable that the statement in this particular is false. To assume his previous good health is therefore purely a presumption, and, as already said, no inference can be based *on presumption.*

If now it appear that the patient is prosecuting a suit for personal damages for his injury and its alleged consequences it at once becomes evident that his statements regarding symptoms of tabes previously to his injury not only can not have any positive value, but are really presumably false. If we analyze further we learn that the real cause of tabes is unknown, and that even those who are most familiar with it do not agree in all particulars as to its essential nature. It is impossible to establish a causal relation between two terms when the essential nature and necessary antecedents of the second of them are absolutely unknown. The conclusion, therefore, that the tabes following the injury as a necessary dependent is without the slightest justification. It has never been proven that an injury or physical trauma can produce the symptoms and changes characteristic of tabes, while it is a daily observation that the latter condition is constantly met without there being the slightest suspicion of an injury ever having entered into the history.

It is very evident then that trauma can not be held to be a necessary antecedent of tabes, nor is there any basis in reason for even inferring a causal relation between the two. The fact that the evidences of tabes may become rapidly manifest subsequently to an injury is no reason for assuming that the injury acted as a cause, or even hastened the advance of the condition.

It is perfectly well known that an individual may be subjectively in good health, yet a careful examination will show that numerous defects are present, which defects have remained unnoticed by the individual, owing to the fact that they have been compensated for, or the defective functions vicariously performed, or the individual's preoccupation along other lines has temporarily excluded from consciousness the impressions produced by the defects. Let now any event markedly disturb the equilibrium of the individual's existence, and the defects may become rapidly manifest, yet there will be no causal relation whatsoever between the disturbing element and the particular manifestations which become apparent.

The mere fact that the manifestations subjectively followed the alleged antecedent in question furnishes no ground for inferring a causal relation between the two; in fact, no such inference can have the slightest justification unless it can be shown by direct evidence that the said manifestations are the necessary dependencies of the said antecedents. The consequences need not necessarily be immediate, but if mediate, continuity, consecutiveness, and concatenation must be shown. In the case under discussion these things can not be shown. The conclusion then that the tabes is the result of the injury received is without the slightest justification, as it rests entirely on assumption and inference.

DIAGNOSIS SHOULD BE BASED ON EVIDENCE.

Every diagnosis is, or should be, a conclusion based on evidence, yet how often do we find when the rules of logic are applied that the diagnosis, instead of resting on evidence, rests on assumption and inference. This is due to the fact that the majority of physicians in their ratiocinations fail to distinguish between assumption, inference and fact. An assumption is that which is taken for granted—that which is accepted as true without evidence—while an inference is the result of a ratiocination based on a certain amount of evidence. The difference between an inference and a conclusion is that the former is drawn from the appearances of things, is partial and indecisive, and pertains to particular circumstances, while a conclusion is drawn from real facts, is full, decisive and conclusive, and expresses the necessary dependencies of the premises.

The difference between an assumption, an inference and a conclusion may be well illustrated, as follows: A patient presents himself suffering of a disease of one kidney, which may require removal. The question which immediately presents itself is, Has the patient two kidneys? Omitting the preliminaries of the mental process for brevity's sake, the proposition may be stated in this manner:

Most men have two kidneys.

This is a man.

Therefore, this man has two kidneys.

It will be seen that the major premise contains the word most, which at once subdivides men into at least two classes, while the minor premise contains nothing whatever which indicates to which class the particular man belongs. Therefore no conclusion can be drawn, and when it is accepted that this particular man has two kidneys it is a pure assumption. If, however, by the use of the segregator or ureteral catheter, urine be collected in the two vials, some evidence is present on which may be based an inference that the patient has two kidneys. If in addition to the mere collection of separate urines the urines be noted to drop in a normal intermittent or perhaps alternating manner; if one be markedly bloody while the other is perfectly clear; or if on analysis the composition of the one differs so greatly from that of the other as to make it impossible that both could have come from the same organ, then the conclusion is warranted that two kidneys exist in the particular man in question, and this fact may now be used in arriving at any further conclusions regarding, for example, the proper course to pursue. Thus it becomes self evident that a conclusion cannot be based on an assumption or an inference, but must rest on the facts themselves.

Medicine is a science, and the statement is not invalidated simply because most, yes, the large majority, of the facts pertaining to it are unknown. No science is complete in the sense that all the facts pertaining to it are known.

During the development of any science or of a theory it frequently becomes necessary to assume the existence of certain conditions or relations as a working basis, but it should be remembered that all deductions made from such assumptions are purely hypotheses, and are but the scaffold which supports the workmen during the building of the permanent structure.

In medicine there are many hypotheses which are of the greatest value in enabling us to develop the facts, but when we come to the practical application of our knowledge to the individual case, or to the giving of testimony before courts and juries, we should learn to recognize and to distinguish the assumed, the inferred and the hypothetic, so as to confine ourselves to the known facts and the warrantable conclusions deviate therefrom.

NATIONAL SUPERVISION AND STANDARDIZATION OF FOOD.*

H. L. E. JOHNSON, M.D.
WASHINGTON, D. C.

The relation of pure food to the health of a nation is equally important with good government of a nation. Each year shows not only an increase in the efforts of hygienists and governments to protect the individual in the matter of his food, but also the slow but steady progress of food-producing and controlling corporations in their adulterating, embalming, misbranding and counterfeiting processes, culminating in the disgusting and nauseating revelations of the past few months, which have shaken faith throughout the civilized world in the purity of almost every article of food and drink.

Proprietary drug compounds are, in many instances, either inert, wholly false in their claimed composition, dangerous to health or habit producing. Under various names they are hawked about, through a variety of methods, leaving in their wake disappointment, poverty, complicated illnesses, habitués and mental wrecks.

Wealth, greed of the tariff-protected corporations and their almost unlimited opportunities for fraud give birth to these abuses. Ignorance on the part of the laity of the facts, or lack of appreciation of the health effects, together with the failure of the physicians and hygienists to educate the public in these matters, fosters this state of affairs. Publicity is the potent remedy for these evils.

The food of a nation should be as genuine as the nation's bond and currency. Counterfeiting of either should be a felony, and as such should be severely punished.

Because of its application to present conditions, I quote from the report[1] of the committee of the Pan-American Medical Congress on "Department of Public Health for the United States," adopted at Mexico City, Mexico, November, 1896, the following:

"We further recommend:

"The passage of uniform national and state laws regulating the importation, exportation, sale, inspection, and standard of meats, fruits, and food-stuffs, water supply, ice, milk, and beverages, prohibiting adulteration and providing adequate penalty for violation.

"The passage of uniform national and state laws regulating

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* Read before the Section on State Medicine, British Medical Association, Toronto, Canada, Aug. 24, 1906.

1. For full report see U. S. Senate document No. 38, Fifty-fifth Congress, first session.

the manufacture, importation, exportation, and sale of drugs and chemicals, with provision for their inspection, and penalties for their adulteration. And a further provision requiring the labeling with exact formula of all proprietary medicines and compounds, and providing penalties for violation.

"The passage of uniform laws, national and state, regulating the sanitation of railroad cars, both steam and street, barges and ships, steam and sail, public vehicles, ambulances, laundries, slaughter houses, morgues, hospitals and dispensaries, jails and reformatory institutions, with penalties for violation.

"The passage of uniform laws, national and state, regulating the hygienic management of contagious diseases, personal and house quarantine, vaccination, hygiene of dentistry, barber shops, public baths and gymnasiums, amusement halls, migration of tramps and profligate persons, disposal of dead bodies, garbage and sewage, draining of land, and removal of weeds and decaying vegetation, and providing penalties for violation.

"The passage of uniform laws, national and state, providing for and regulating disinfecting plants, steam, dry heat, and chemical, for mails, foreign and domestic, clothing bedding, money, persons, etc. Bacteriologic laboratories, animal industry and inspection plants, state and national hospitals, and retreats or sanitariums for the treatment of habitués, inebriates, venereal, tubercular and insane persons, with special laws for commitment to and discharge from the same. District nursing for the poor, sick, obstetrical, contagious diseases, etc.

"The passage of uniform laws, national and state, providing for the appointment of state and national medical experts and the punishment of medical crimes.

"The passage of uniform laws, national and state, regulating state and interstate medical, surgical, and dental practice, which will protect the same as a science and not as a trade.

"We further recommend adequate appropriation of money by the several states and the general government for the scientific investigation of public health matters in this and foreign countries, and the suppression of diseases, endemic and epidemic.

"We further recommend that appointment to and the tenure of medical offices shall depend upon professional ability and efficiency, and not on political influence.

"HENRY L. E. JOHNSON, M.D.
"President Committee on Department of Public Health."

The health of the public, through an appropriate department of the government, should be efficiently protected, and all food, beverages, drugs and drug compounds, their preparation, preservation, storage and sale should be standardized and regulated. International standardization should and can be made universal by treaty with the several powers.

Opposition to standardization and control emanates principally from the large dividend-paying, tariff-protected corporations, who, when reforms are urged, make their usual threat—"To increase the cost to the consumers"—and in other ways obstruct and defeat proposed remedial legislation.

Cold-storage foods, undrawn poultry, canned goods and meat packers' productions offer a broad field for medical and hygienic investigation, for determining food etiology and placing responsibility, in connection with the alarming increase in intestinal diseases, deaths from appendicitis, and the so-called "acute indigestion." A few successful legal actions, civil or criminal, based on established bad food causation of illness or death, would promptly drive disease-producing foods from the market.

From a politico-industrial point of view, the recent legislation in "the states" providing for pure food and meat inspection is excellent so far as it goes, but, from a medico-hygienic standpoint, is not entirely efficient or satisfactory, as it tends to conserve the financial interests of the producer and jeopardize the health of the consumer, by delaying the operation of the food bill, and by omitting the date of slaughter, production and inspection from the government certificate or label, thereby placing an immense quantity of meat and meat products, prepared under presumably careless and objectionable methods, now in cold storage or warehouse, on an equality with, and indistinguishable from, recent products prepared under careful government supervision. An identical inspection stamp or certificate will be placed alike on meat slaughtered 5 years and that slaughtered one month, without any distinguishing marks to guide the innocent purchaser. Thus, the consumer is deprived of his right of selection, choice, and exact knowledge of meat and meat products, by the absence of dates of slaughter and inspection. Meat slaughtered and kept in cold storage five or ten years may be wholesome at the time of inspection, but how much longer will it keep so? The government's certificate given in such cases is legally final, but such a guarantee is at least doubtful as to healthfulness.

The American people contributing this year, from their tax funds, the vast sum of $3,000,000 to enforce this special legislation, designed to correct inexcusable irregularities of meat-producing corporations, should have, irrespective of political faith, supported the demands of their President, and insisted on further protection of their health, through adequate inspection, dating certificates or labels, and severe penalties for violations.

WHAT EFFECTIVE MEASURES ARE THERE FOR THE PREVENTION OF THE SPREAD OF SYPHILIS AND THE INCREASE OF PROSTITUTION?*

CHARLES GREENE CUMSTON, M.D.
BOSTON.

It is not to be supposed that there exists at the present time a single moralist sufficiently severe, or rather insufficiently enlightened, who would dare to doubt the necessity of measures capable of combating the propagation of venereal diseases. Fortunately, the time has past when syphilis was believed to be the unique result of depravation and was considered as the legitimate punishment of debauch. The numerous sources of infection are too well known at the present time to uphold the old rigorous theories and to these I shall not revert.

Of all the diseases which may affect the human race by contagion and which bring about the greatest disasters to society in general, there is not one more serious, more dangerous, or more to be feared than syphilis. This, I believe, is generally admitted, and since this is the case, why should not the proper authority profit by the knowledge that the progress of science dictates? Many years ago Michael Lévy said: "The extirpation of this leprosy of our time that is called syphilis, is not above the power of governments. The sequestration and leproseries put an end to the old scourge, leprosy; this plague has been the object of an extensive and expensive prophylactic control; every nation has made sacrifices to do away with the germs of smallpox, yet syphilis has caused more harm than all these diseases put together. It silently deteriorates generation after generation; its contagion is more evident than that of the plague; why are not the same barriers and the same means of extinction built up in all countries? Such is the human race; the lightning of insolate epidemics which pass over our heads like an electric cloud, benumb and frighten peo-

* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

ple; they endeavor to prevent their return, while they become familiar with the slow and continued plagues which they carry in their flanks and which cause them to undergo hereditary ravage with the same patience that they show toward meteoric phenomena."

INTERNATIONAL PROPHYLAXIS.

Syphilis is not, like smallpox, a disease whose miasms disseminate contagions to the distant parts; neither is it like any of the exanthemata, susceptible of producing itself spontaneously; alone, immediate contact produces its development. Its extinction, although difficult, is not a chimerical dream; and if all nations would some day establish a complete system of international prophylaxis, much could be done for suffering humanity.

The word progress is on everyone's lips and modern civilization is justly proud of its numerous conquests. Scurvy has disappeared from those localities where it formerly reigned endemically; vaccination has stopped the ravages of smallpox, but syphilis still continues to be propagated and for centuries has not ceased to eat the limbs of the human race. Leprosy has been practically done away with, why should it not be the same for syphilis?

Here, however, I would say, I do not harbor too great an illusion. If the extinction of syphilis is not theoretically a dream, the universal consensus of opinion of all governments is that, in the present condition of society, it is a pure utopia. In point of fact, nations vary in character as do individuals, and a kind of mutual and systematic opposition is constantly present acting as an obstacle to their united action and it is to feared that this antagonism by continuing, will, for many years to come, offer a great resistance to the realization of any united efforts. If, at present, much has been done to prevent the extension of syphilis and other venereal disease, it nevertheless remains a glaring fact that there is still much to be done and that the large majority of prophylactic means now existing requires great modification.

MEANS OF PREVENTING DISSEMINATION OF SYPHILIS.

One of the most important means at our disposal for reducing the increase and spread of syphilis certainly resides in hospitalization, to which I shall now briefly refer. Formerly, all cases of infectious fever were placed in a common ward, but to-day all our modern hospitals have special wards or buildings reserved for diphtheria, scarlet fever, measles, etc. What has been done for acute infections is being attempted in chronic infections and for a number of years back we have watched the development of special hospitals, or sanitoria for tuberculosis. No matter what may be the divergence of opinion existing relative to these establishments and the results which may be obtained, it is nevertheless true that it was to this prophylactic procedure that the ancients were able to attenuate, if not to cause completely to disappear, the hideous disease that leprosy was in former years.

Among those essentially contagious diseases, which should receive the attention of modern prophylaxis and hygiene, venereal diseases should certainly be given a distinct and separate place. No one to-day would dare to uphold that the ills produced by the pathogenic agents of these diseases are not at least quite as considerable as those of tuberculosis, for example. I do not believe that I am going too far when I say that gonorrhea in the female is grave, prodigiously grave, and that it may be considered as the most fearful wound in young households. As to syphilis, with its high death rate and infantile malformations, with the disasters that it produces in certain individuals, with the fearful affections whose eclosion it favors and, although they bear the special name of parasyphilitic, which are none less attributable to it, we will not insist on this phase of the question.

Prophylaxis consequently has the imperious duty of considering these diseases, and among the arms which it has is certainly hospitalization. And, in the first place, let me say that I disagree completely with those who will not recognize an autonomy in venereal diseases, which I do not believe can be refused them; those who in principle believe that these patients should be placed in general medical or surgical wards corresponding to their cases, such as, for instance, urethritides and gonorrheal vaginitides in a service of genitourinary surgery; mucous patches, cutaneous manifestations of syphilis and chancroid ulcerations in the service of the dermatologist, etc. In a word, I believe in special hospitalization for the simple reason that the end to be attained is prophylaxis and the first condition to fulfill with this end in view when dealing with venereal disease, is isolation of the patients. Until this is done hospital treatment will remain completely ineffectual. This does not mean that I believe that hospitalization is in itself sufficient to furnish the solution of such a complex problem as venereal prophylaxis. If venereal diseases may be compared to infectious diseases on account of the factor contagion which is common to both, and if we eliminate extragenital infections, which, for that matter, represent a very small portion of cases, it must be recognized that they differ by the manner of contagion. While infectious diseases generally take on the epidemic type, while they may seize on an individual who is endeavoring to defend himself against them, venereal affections never assume the epidemic type and only exceptionally seize on an individual, who, knowing them fully, does what is necessary to avoid them. As has already been done by a number of authorities, we might possibly designate as epidemics those instances in which infection of a large number of healthy individuals has taken place from a single infected subject. Military surgeons, especially those belonging to small garrisons, have frequently noted the contamination of a large number of soldiers from a single woman.

This classification I do not wish to make, believing that it is merely a simple way of looking at things, original without a doubt, but susceptible of much discussion. Is it because venereal diseases are not contagious in the same way as eruptive fevers, or because their mode of contagion is nearly always genital, that we are led to consider an entire group of diseases for which hospitalization is useless, or merely of a temporary nature? These patients might very well be kept temporarily in a hospital, for a time just sufficient to initiate them into the manner of treatment that they should follow and to teach them to conform rigorously to the rules of general hygiene, which are so important in the treatment of their disease. It is for this reason that in the case of syphilitics I believe that it would be well to detain them in a hospital for a few days with their consent when they come to consult for the first time, and after their discharge from the wards they may continue the treatment in an out-patient department.

Beside voluntary hospitalization—and from a theoretical viewpoint hospitalization should be made obligatory—for those who are perfectly aware of the danger of their disease and who do not hesitate to communicate to others the affection of which they are possessors, hos-

pitalization should be made obligatory for those individuals who are voluntarily contagious. There would probably be no division of opinion on this subject in the medical profession if such measures could be applied to the male as well as to the female. It would be quite as justifiable and legal as the modern means of prophylaxis in the case of other infections, such, for example, as the quarantine imposed on ships, or the establishment of a sanitary cordon and so forth. Although a contagious venereal subject can not be held by obligatory hospitalization, there is, however, a class, which I believe should be compelled to submit to it; I refer to prostitutes. This measure has been considered arbitrary, illegal and inhuman and certain people believe that prostitutes should be free to enter a hospital or not as they see fit. This question has given rise to long and ardent discussions to which I will not refer. It seems to me, however, that the only way to control the transmission of syphilis is to sterilize prostitution as we would sterilize our dressings for a surgical operation, and could this be accomplished the gonococcus and *Spirochæta pallida* would, to a great extent, be removed from the list of pathogenic organisms.

I shall here ask to be permitted to make one reflection, namely, Who is the most guilty from the view point of propagation of venereal diseases, man or woman? I have no hesitancy in believing that it is the woman, and for these reasons: For example, a man contracts syphilis. Where does he contract it? Why, from contact with a female, who, from the very fact that she entered into relations with him, leads an active genital life. To whom will the man transmit it? Evidently to another woman, who, just like the first, is also leading an active genital life. Thus, the infection being contracted from one woman returns to another woman. And this woman, what is she? An avowed prostitute only rarely; statistics proves this; far more frequently she is a clandestine prostitute, and to this class I shall not refer. It occasionally also is a girl who has recently fallen, contaminated by her first lover, and who, forced by an exaggerated sexual instinct, or by misery, is perhaps called on to descend one or more rounds of the ladder of vice. In other words, no matter what may be the cause of her fall, she nevertheless becomes a candidate for prostitution. This reasoning may appear on the surface as a mere sophism, but in reality it is not so, because in the male no homologous condition is to be found like that of prostitution in the female.

PROPER EDUCATION OF BOTH SEXES.

Another and most excellent measure for the prevention of both venereal diseases and prostitution is the proper education of young people of both sexes in sexual matters and many excellent contributions to this subject have appeared of late. To mention the various writers who have advised this very common-sense course would take too long and I would merely refer here to two recent articles, the first from the pen of Prince Morrow[1] and one by F. Valentine.[2] The former writer says that the general principle laid down that the education of the public is the most valuable of all measures for the prevention of communicable diseases. Its importance is emphasized in the case of diseases the communication of which lies entirely within the control of the individual. The object of the proposed education is to give the youth of this country a clear comprehension of certain physiologic truths which have a direct bearing on the regulation of their sexual lives and of the serious consequences in the shape of disease and death which follow a breach of hygienic laws. In other words, it is intended to teach them how to live according to the laws of a healthy nature. This instruction in the physiology and hygiene of the sex function should form an essential integral part of the education of youth.

Dr. Morrow criticises our present educational system, the policy of which is to launch the young into the world in complete ignorance of everything pertaining to the laws of life reproduction. In seeking this knowledge the youth is but obeying the law of his mental evolution. Since this knowledge can not be had from legitimate sources—parents and instructors—it is gained surreptitiously and usually from depraved sources, dissolute companions or erotic or quackish literature. To be salutary as a safeguard, therefore, this hygienic education should be given in youth, for it is during this period that the foundations of what may be termed the sexual character are laid and habits of mind and practices are formed which, in great measure, determine the future sexual life of the individual.

Valentine concludes his most interesting paper thus:

Sexual physiology and hygiene need not be formally taught girls, save in the exceptional instances in which the genesic impulse is prematurely developed. Sexual physiology and hygiene should be taught every boy, when mental and sexual puberty make him capable of beneficially utilizing the knowledge. The nature and scope of instruction on sexual subjects should be regulated according to each pupil's ability properly to appreciate the warnings inseparable therefrom.

The age at which a person may safely be instructed in sexual subjects is that age at which, in each individual case, such instruction becomes necessary for the purpose of moral and physical prophylaxis. The individuality of the parent, physician or teacher should be the guide to the choice of one or the other as the exponent of the facts.

Educational institutions may be utilized for instruction in sexual subjects, but such instruction must be given to small groups of pupils selected because of their mental parity as nearly as may be.

Text-books on elementary hygiene should not contain chapters on sexual physiology. Those charged with imparting instruction or sexual subjects should be provided with separately printed chapters on the physiology and hygiene of these matters. These separately printed chapters could then be given with the greatest discretion to such pupils only whose mental development would preclude their misusing the information derived therefrom.

All instruction to the laity on sexual subjects should be directed essentially to serve as a groundwork for the following ideas:

(a) Many learned men hold that ante-nuptial coitus is not necessary for the health of the individual.

(b) Continence reduces the sexual desire.

(c) Gratification of the sexual impulse before marriage degrades the moral tone and exposes to serious infection.

(d) Venereal diseases are not disgraceful infections, but the result of unfortunate lack of self-control.

(e) The greatest danger at the inception of venereal diseases is in their being maltreated by quacks.

(f) If a person is so unfortunate as to contract a venereal disease, self-preservation should cause him to immediately seek the advice of his family physician.

I believe that the public should be particularly enlightened on the dangers of gonorrhea, that it should be

1. Amer. Med., Jan. 13, 1906.
2. New York and Phila Med. Jour., Feb. 10, 1905.

fully aware that recent statistics conclusively show that the number of gynecologic operations increase each year necessitated by lesions due to the gonococcus. The husband, either criminally or unconsciously, transmits the gonococcus to his wife, usually in the following manner: In his bachelor days he contracted a gonorrhea, which was treated according to the usual methods; the gonorrhea disappears, but leaves in its place an insignificant gleet, a chronic discharge of such apparently little importance that the patient neglects to have it treated, supposing that it will cure itself. He gets married, usually without any thought of the past and without consulting a physician as to the seriousness of this little morning drop. After a variable length of time, and as soon as a congestion of the uterus predisposes the organ to microbic receptivity, the young wife presents all the well-known symptoms of a gonorrheal infection.

To a certain extent the public has surmised the dangers accruing from this disease, but not to the extent that it should. In face of the terrible consequences to which gonorrhea may give rise, the mortal dangers to which the spouse is exposed, sterility following gonococcic complications, certain members of the profession have declared open war against gonorrheal patients culpable of contamination. In Germany especially a law is under consideration which tends to protect women against venereal contagion from the husband or even the lover. Professor Hegar, in Germany, Jullien, Cazalis and several other physicians in France have proposed an obligatory verification as to the genital innocuity of the future husband. As a conclusion to this I would advise that young men be told that if they are unfortunate enough to contract gonorrhea or syphilis they should loyally consult a reputable physician before their marriage to ascertain whether or not they are fit subjects for matrimony. It is high time that the profession put an end to public ignorance in these matters and thus to a great extent avoid many catastrophes and moral pain.

There is a sad commentary on the practicability of the work of the temperance reformer in the fact that each succeeding generation of medical men is brought face to face with the disheartening truth that alcohol is still the "open door" through which stalks the foul specter, venereal disease. Since the days of Noah alcohol has continued to be the most powerful weapon in the seducer's armamentarium. In this he has an agent more deadly to virtue than the most powerful implement of warfare is to life itself; and with it he has it in his power to pave the way for suffering beyond human expression.

It is not my purpose to descant on the horrors of intoxication, nor is it at all necessary for the purposes of my theme. I do not need to follow the victims of the drug beyond that point where it robs the intellect of its inhibitory powers and deprives it of free agency. Such a state of mind by no means of necessity implies drunkenness; indeed, it comes at a point well on the hither side of that condition, and the horror of it all lies in the very fact that brain activity is not actually annihilated, but only cruelly perverted.

In this state the ordinary calm, self-restrained discriminating man may be transformed for the time being into a rutting animal and the virtue of a similarly endowed woman may drop from her like a mantle.

In the presence of men of your training and experience of human frailty, it is almost supererogation on my part to pursue this line of thought in greater detail. Given two creatures of opposite sexes, created after the image and likeness of the Maker, reduce them by alcohol to the state of mind above described, and the inevitable results are familiar to you all.

The stage settings that serve for the act in which the luetic virus may be imparted vary from the most sordid and squalid to the most luxurious and artistically perfect the human intellect is capable of inventing; and the actors in this most unspeakable of human tragedies, in like manner, represent each and every stratum of the body social.

The foci of propagation of venereal disease and prostitution do not wholly reside in houses of ill-fame. The reformer must look to the comic opera company, the private dining room, the furnished lodgings, the apartment house on the "easy virtue" style, the steamboat stateroom, the massage and manicure parlors, the automobile, the electric baths, the fortune-telling outfits, and lastly the avowed *maisons de joie*. The American cities have two potent foci for the development of prostitution, of which continental cities can not boast; I refer to the downtown office building and the bachelor apartment houses so much in vogue at the present time.

Prostitution, especially the clandestine form, is rampant in Boston, and in proportion to its population the Hub can compare favorably in this respect with any European city of its size with which I am familiar.

Beside those causes of a general order which influence prostitution and criminality in general are others which belong more particularly to the former. Leaving aside the culpability belonging to its authors, this crime is the consequence of other mistakes on the part of jurisprudence and public opinion. A large part of the responsibility rests on public opinion, because it encourages the seducer by its indulgence, perhaps even by its admiration. Public opinion also directs the education of women and the present system forces her especially toward the arts of seduction and coquetry, thus making her easier to seduce than seductive. The seducer of the twentieth century generally does not understand the extent of his responsibility; he goes about the proceeding because he is fully aware that many others have done the same, and he is covered by public opinion until the day that the scandal breaks out. Our up-to-date morals have taught him that to seduce a young girl, up to that time virtuous, and afterward to abandon her, in other words, of dishonoring her, and making her a candidate for prostitution, is practically nothing, and jurisprudence in our country hardly takes into consideration the moral assassin.

Another important factor in the development of the prostitute is our modern education. In large cities young girls of the people and working classes are, by their clothes, their manners and even mentally, in a condition far superior to the men of their own class. From this very fact, they become easy conquests for men of the well-to-do and richer classes, and there would be fewer seduced girls and married clandestine prostitutes if the parents did not sanction their daughters' luxurious habits far above their social rank and fortune.

Another potent cause forcing women to their fall is the insufficiency of salaries in large department stores and workshops. The conduct of a young girl, whose poverty prevents her from entertaining the hope of marriage, thus no longer becomes a moral question with her, but one of interest, and she reasons to herself that it is just as well to get as much out of life during youth as possible, if nothing but poverty-stricken old age and in-

firmity are to follow the pleasant days of the springtime of life.

On the other hand, the conception of marriage as the only possible mode of union has also disappeared from the minds of the mass of the population; marriage has ceased to be a sacrament and is looked on merely as a contract, which, in turn, under the influence of public opinion, law and jurisprudence in the matter of divorce, becomes every day still more fragile.

To sum up, it would seem to me that in order to deal with the spread of syphilis and prostitution, we should take into consideration the control of existing morals and opinions, teach the youth of our country the evils accruing from venereal diseases and the erection of proper hospitals for those already afflicted and who may become dangerous to society from this fact.

871 Beacon Street.

Clinical Notes

THERMOVIBRASSAGE: A NEW METHOD OF TREATMENT.

PRELIMINARY REPORT.

FREDERIC WADE HITCHINGS, S.B., M.D. (Harv.)
CLEVELAND, OHIO.

Nearly a year ago it occurred to me that if it were possible to give a treatment in which the effect of either dry or moist heat of any desired intensity could be added to that of mechanical vibration the value of the latter might be greatly modified, and perhaps markedly increased. Most of the available time since has been devoted to perfecting apparatus for attaining this end, and not only has this been successfully done, but enough clinical and other data have been accumulated to warrant a preliminary statement.

APPARATUS DESCRIBED.

In brief, what has been done has been to insert a resistance coil into the same space ordinarily occupied by a ball vibratode. The case surrounding the coil is of metal, and screws on the vibrator shaft just as an ordinary vibratode screws on. From a plug switch on the bale of the vibrator a short cable passes into the case to connect with the coil wires, and part of the current which runs the vibrator is shunted through the coil circuit at pleasure by turning a switch on the bale beyond the plug switch, but between the switch controlling the current supply for the vibrator motor and the latter. As a result of this arrangement the current can not pass through the coil unless the vibrator is actually running, and then only when the heat switch is turned on. This protects the coil from becoming overheated by the operator going away and leaving the current on too long, an accident which happened once under a different arrangement, with the result that the case became red-hot.

By turning on the heat switch for thirty seconds after the vibrator is running and then turning it off a temperature of about 108 F. develops in the case in another thirty to forty seconds. This is usually a suitable temperature with which to begin a treatment, and can be borne with comfort. At the end of from three to five minutes the temperature may be raised by again turning on the heat switch for from ten to twenty seconds. The amount of heat is under absolute control, and experience has shown that the individual patient varies very much in his susceptibility, so that it is best gradually to raise the temperature according to circumstances. The application is best made directly to the skin or through a moist cloth, if moisture is desired. Of course, the vibrator continues to vibrate, whether the heat is on or off.

SUCCESS OF TREATMENT.

The first case treated by thermovibrassage seems to show what has since been borne out by both clinical and experimental work, i. e., its peculiar efficiency in some cases, and that the effect produced is different from that produced either by vibration or the application of heat alone.

History.—Patient, a woman, aged 48, had suffered for years from attacks of trifacial neuralgia which were unusually severe, and confined her to her bed for at least twenty-four hours. No particular exciting cause had ever been found after repeated examinations, although the attacks were most likely to come on when she was over-tired. Different forms of treatment had been tried with little or no result. In the attack under discussion, she was seen nine hours after its onset.

Examination.—The pain was of moderate severity, and radiated over almost the entire left side of the face. There was a tender point over the supraorbital foramen, and the back of the neck on the same side was slightly indurated.

Treatment.—At first the following treatments were tried in the order given: The application of steady heat from a "thermalite" bag, alcoholic solution of menthol, vibration without heat twice with an hour interval between each time (this only made the pain worse), and, finally, an acetanilid compound tablet (gr. iii. ss. acetanilid, etc.). From all these things there was absolutely no relief.

Two hours after the tablet was given, dry thermovibrassage, as hot as could be borne with comfort, was given over the tender spot, painful areas, and neck for five minutes. The pain stopped completely before the treatment was over, and the patient felt drowsy, and took a nap. There was no return of the pain until another attack came on three weeks later.

It may be argued that the pain stopped because the attack happened to end just at the time the thermovibrassage was applied, but this does not seem at all probable with such a prompt and decisive effect after the thorough trial of the other things over a total interval of nine hours with no benefit. Moreover, in later and more severe attacks than this the effect was just as striking when the treatment was given nearer the time of onset. More cases of a similar nature have been treated, and generally with equally favorable results, but the number is too small as yet to draw definite conclusions as to the per cent. of cases which may be expected to be benefited.

Muscular affections seem to be particularly suited to this treatment, but the necessity of making accurate diagnoses is too apparent to need further mention. Already it has proved of decided value in sprains and bruises, in reducing swelling and soreness, and relieving pain. In a case in which a patient's thigh was severely bruised by being crushed by an automobile against the side of the garage, with resulting hematoma and exquisite tenderness, the flesh could hardly be touched at the beginning of the treatment, but before the end several pounds' pressure could be applied, and the results were most satisfactory. The symptoms in one case of acute torticollis disappeared under one treatment, and in another chronic case there was marked initial benefit, but the late results have not been determined. Probably they will not be as favorable. In a case of flat feet, complicated by general contraction of the muscles of the calves, severe pain was caused by the patient having to climb long flights of stairs many times a day. Plates were worn, but the pain had continued in spite of massage and was steadily increasing. When

treated the result was more satisfactory as far as the pain was concerned, as it almost all disappeared, and doubtless would have done so completely if the stair-climbing could have been given up.

In a case of chronic rheumatoid arthritis affecting the patient's knees vibration without heat was tried as a check against thermovibrassage. The stiffness was relieved somewhat, but the effect was very transitory and not very marked. With the latter the stiffness, soreness and pain were more relieved than by any other treatment the patient had tried in many years, and the effect lasted much longer than with other treatments. No hope of a cure could be held out, but the patient was most grateful for the relief afforded.

A private patient who had had a spastic paraplegia since he was a child was treated for congestive headaches due to mental overwork. An area three inches square on the back of the neck was treated for five minutes at a time on successive days. The headaches disappeared in a very short time and did not return. The interesting point about this case, however, was an entirely unlooked-for result, which was that the patient found that he could stand up much straighter and control his legs much better after each treatment. At first the effect lasted about twelve hours. Later it lasted longer, and at the present time one treatment a week suffices. At one time he had been under the care of Dr. S. Weir Mitchell, who prescribed massage and electricity, and he had also been treated by other prominent men, but the benefit from thermovibrassage is greater and more lasting than from any other previous treatments. It may be noted here that vibration without heat does not produce the same effect at all. So far no opportunity has offered to see whether other similarly-affected patients would be benefited in the same way.

At present, through the courtesy of Dr. Henry S. Upson, professor of neurology in the Medical Department of Western Reserve University, thermovibrassage is being given a thorough trial in the neurologic clinic of the Lakeside Hospital Dispensary. From the outset it is as useless to expect the regeneration of destroyed neurocytes from its use as it is from any other form of treatment, but the indications are that it is going to prove to be at least as valuable as electricity in its different forms and massage in many cases, and in some of decidedly greater value.

With the help of Dr. J. B. Austin, enough experiments have been done to show clearly that the effect is both constitutional and local, and, as above stated, is different from that of either vibration without heat or *vice versa*. That it is of far greater value than ordinary vibration is borne out by all the clinical and experimental evidence. Many more cases than have been cited have been recorded, but a description of the experimental work and fuller details will be withheld until still more data have been collected.

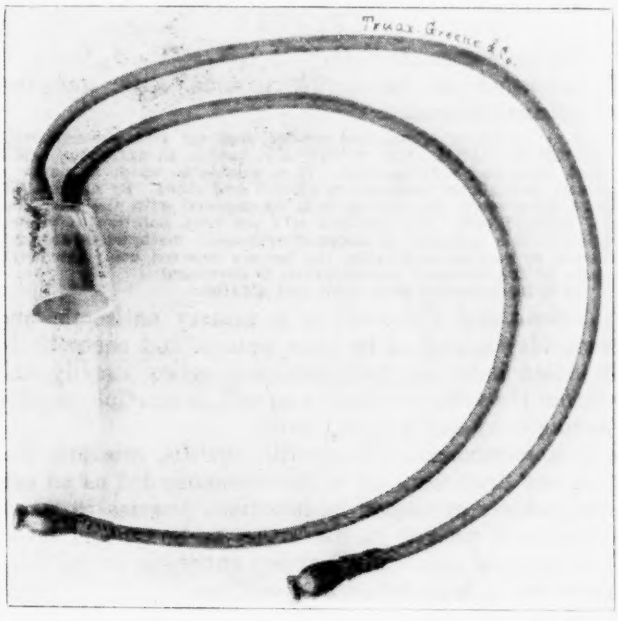
2658 Euclid Avenue.

A NEW STETHOSCOPE.

EDMUND F. WOODS, M.D.

JANESVILLE, WIS.

In presenting to the profession the stethoscope shown here I wish to recommend it for its simplicity, lightness and durability. The bell is made from very hard metal, nickle-plated, and so thick that it shuts out all outside sounds. It, therefore, conveys the heart and lung sounds better and more clearly than any other instrument I have been able to find, and especially gives the heart sounds without the humming sound so noticeable in other stethoscopes.



TOTAL LUXATION OF THE SPINE.

THOMAS F. RAY, M.D.

DEESON, MISS.

The abstract of Steinmann's article on "Total Luxation of the Spine," in THE JOURNAL, June 16, 1906, prompts the following report:

Oct. 19, 1898, I was called to see a negro. October 17 he had attempted to rearrange some bales of cotton loaded on a wagon. In lifting them he placed his head under the bales and lifted with his head and hands. In some way a bale fell on him and crushed him to the earth, whence he was picked up and attended by an irregular practitioner. I found him suffering from a complete bilateral dislocation of the fifth cervical vertebra forward with complete paralysis of all of his limbs and bladder. He could move neither hands nor feet and could not control his urine. His bowels had not moved since the injury. I immediately attempted reduction, without anesthesia, which was accomplished very easily. All the symptoms gradually improved. At the expiration of two years he seemed normal in every way with the exception of a deficient grasp of the left hand. I have not seen him for six years, but his employer writes that he is well.

New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(*Continued from page 1303.*)

HEXAMETHYLENAMINE METHYLENCITRATE.[1]

This substance, $C_6H_8O_7(CH_2)_6N_4 = C_{12}H_{20}O_7N_4$, is a compound of hexamethylenamine with anhydromethylencitric acid.

It is a white, crystalline powder, melting with decomposition at 165° to 175° C. (329° to 347° F.), having an agreeable, acidulous taste and acid reaction. It is soluble in about 10 parts of water, but almost insoluble in alcohol and ether. By dilute acids and more easily by alkalies it is decomposed with the liberation of formaldehyde. On addition of 1 per cent. solution of phloroglucin to a solution of hexamethylenamine methylencitrate, followed by sodium hydroxide, the intense rose-red color characteristic of the liberated formaldehyde is developed.

It is incompatible with acids and alkalies.

Actions and Uses.—It is a urinary antiseptic and germicide claimed to be more prompt and energetic in its action than hexamethylenamine, acting equally well whether the urine be alkaline or acid in reaction, rapidly clearing it up and allaying pain.

It is recommended in cystitis, pyelitis, prostatic diseases and urethritis. It is also recommended as an efficient urinary antiseptic in infectious diseases in which bacteria are present in the urine, as in typhoid fever. It is regarded as a useful urinary antiseptic in the later stages and chronic forms of gonorrhea.

It may be used as a prophylactic against infection in case of operations or instrumental manipulation of the genitourinary tract.

Dosage.—0.6 to 1 Gm. (10 to 15 grains).

HOLOCAINE HYDROCHLORIDE.

ETHENYL-PARADIETHOXY-DIPHENYL-AMIDINE HYDROCHLORIDE.

Holocaine hydrochloride, $CH_3.C(:N.C_6H_4.OC_2H_5)(.NH.C_6H_4.OC_2H_5).HCl = C_{18}H_{22}N_2O_2.HCl$, is the hydrochloride of a basic condensation product of paraphenetidin and acetparaphenetidin (phenacetin).

It is prepared by the interaction of molecular proportions of paraphenetidin sulphate and acetphenetidin (phenacetin) in the presence of phosphorus oxychloride, decomposing the resulting holocaine sulphate with sodium hydroxide, crystallizing the base from alcohol, neutralizing it with hydrochloric acid, and crystallizing.

It forms small, colorless crystals, neutral or faintly alkaline, melting at 189° C. (372.2° F.), odorless, faintly bitter and producing transient numbness on the tongue. It is soluble in 50 parts of water and freely soluble in alcohol. On boiling in glass vessels the aqueous solution becomes turbid, owing to a separation of a small quantity of the free base by alkali derived from the glass.

It should form a clear, colorless solution in water, neutral or faintly alkaline, yielding white precipitates on addition of silver nitrate or of ammonia. The base obtained by precipitation with ammonia and crystallized from alcohol forms colorless needles, which melt at 121° C. (249.8° F.). Incinerated on platinum, it leaves no weighable residue.

It is incompatible with alkalies and their carbonates and the usual alkaloidal reagents. Glass vessels should be avoided in preparing the solution, porcelain being used instead.

Actions and Uses.—It is a local anesthetic like cocaine, but having the advantage of quicker effect and an antiseptic action. Five minims of a 1 per cent. solution when instilled into the eye are usually sufficient to cause anesthesia in from 1 to 10 minutes. It is more toxic than cocaine and without effect on the pupil or blood vessels. It is not so useful as cocaine when the vasoconstrictor effect of the latter is desired. It is said not to cause the scaliness of the cornea which sometimes results after the use of the older remedy.

Dosage.—It is applied in a 1 per cent. aqueous solution prepared in porcelain vessels.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York). German patents Nos. 79,868, 80,568.

HYPNAL.

ANTIPYRINE CHLORALHYDRATE. MONOCHLORAL-ANTIPYRINE.

Hypnal, $C_{11}H_{12}N_2O.CCl_3CH(OH)_2 = C_{13}H_{15}N_2O_3Cl_3$, is antipyrine combined with one molecule of hydrated chloral.

It is prepared by triturating molecular proportions of antipyrine and hydrated chloral together, dissolving the resultant oily liquid in hot water and allowing the solution to cool.

It occurs in colorless octahedral crystals or a white crystalline powder, melting at 67° C. (152.6° F.). It is soluble in 10 to 11 parts of cold water, easily soluble in hot water, and in 3.5 parts of alcohol, forming neutral solutions.

The aqueous solution gives the usual reaction for antipyrine (a blood-red color with ferric chloride) and for hydrated chloral (turbidity and separation of chloroform when warmed with caustic alkali). Ammoniacal silver nitrate is reduced with the formation of a silver mirror, but the aqueous solution (1:10) acidified with nitric acid is not altered by silver nitrate nor precipitated by hydrogen sulphide. Hypnal dissolves in concentrated sulphuric acid without coloration and leaves no weighable residue when incinerated on platinum.

It is incompatible with alkalies, their carbonates and bicarbonates and with metallic salts.

Actions and Uses.—Hypnal is an analgesic and hypnotic resembling chloral in its action, but said to be less liable to produce injurious effects on the vasomotor center or the heart. It may be used where chloral is indicated, as in mild forms of mental excitement, incipient delirium tremens, and in insomnia caused by pain.

Dosage.—1 to 2 Gm. (15 to 30 grains); although supposed to be less toxic than chloral, larger doses up to 3 Gm. (45 grains) should be used with caution. It may be given dissolved in water (1:10) flavored with syrup of orange or aromatic elixir.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York).

ICHTHALBIN.

ICHTHYOL ALBUMINATE.

A compound of ichthyolsulphonic acid and albumin analogous to tannalbumin.

It is prepared by precipitating a solution of ichthyol and albumin with diluted sulphuric acid and removing adhering odorous oil by heating the well washed and dried precipitate for 24 hours at 120° C. (248° F.), or by washing with alcohol, benzene, petroleum benzin, chloroform, etc.

It is an extremely fine, grayish white powder, odorless and practically tasteless. It is insoluble in water, in the gastric juice or in acid liquids, but completely soluble in alkaline liquids.

Actions and Uses.—Ichthoform is said to be antiseptic and antiphlogistic. It is reported to be efficacious in arresting intestinal decomposition and inflammation, whilst non-toxic.

Dosage.—For infants 0.13 to 0.3 Gm. (2 to 5 grains), in gruel; older children, 0.6 to 1 Gm. (10 to 15 grains), mixed with scraped chocolate; adults, 1 to 1.3 Gm. (15 to 20 grains), in chocolate tablets.

Manufactured by Knoll & Co., Ludwigshafen, a. Rh. and New York. English patent No. 11,344. U. S. trademark No. 31,114.

ICHTHAMMON.

The ammonium compound of a sulpho-acid obtained from a bituminous mineral by distillation with sulphuric acid and neutralization with ammonia.

1. This is the chemical name for a preparation on the market under the names of helmitol and urotropin, new (which see).

Actions and Uses.—It has the physical properties of ichthyol, a high sulphur content and, therefore, is claimed to have the pharmacologic and therapeutic properties of ammonium ichthyol sulphonate (see ichthyol).

Manufactured by F. Reichelt, Breslau.

ICHTHARGAN.

SILVER SULPHICHTHYOLATE. SILVER ICHTHYOLATE. ARGENTUM THIOHYDROCARBUROSULFONICUM SOLUBILE.

A compound of ichthyol and silver, claimed to contain 30 per cent. of metallic silver and 15 per cent. of sulphur in organic combination.

It is prepared, according to the patent specifications, by neutralization of ichthyol sulphonic acid with silver oxide and extracting the water soluble silver ichthyol sulphonate.

It is a brown, amorphous, perfectly stable powder, having a faint chocolate-like odor. It is freely soluble in water, glycerin, or diluted alcohol, but insoluble in absolute alcohol, ether, or chloroform. Its aqueous solution darkens with precipitation of metallic silver when exposed to the light, but is said to suffer no change in amber colored bottles.

It is incompatible with the soluble chlorides. Its solutions should not be exposed to the light.

Actions and Uses.—It is said to be bactericide, astringent and antiphlogistic. It is reported to combine the bactericidal action of the silver salt with the penetrating and antiphlogistic action of ichthyol.

It is recommended in gonorrhea in all its forms as a succedaneum for organic salts of silver. It is claimed to be the strongest in silver content of all the various organic compounds of silver introduced in late years.

Dosage.—0.04 to 0.2 per cent. solution in gonorrhea; 3 per cent. solution in posterior urethritis; ½ to 3 per cent. solution in trachoma.

Manufactured by the Ichthyol Co., Hamburg (Merck & Co., New York). German patent No. 112,630.

ICHTHERMOL.

HYDRARGYRUM THIOHYDROCARBURO-SULFONICUM. MERCURY ICHTHYOLATE.

A compound of ichthyolsulphonic acid and mercury, containing 24 per cent. of metallic mercury.

It is a dark colored, odorless powder, insoluble in water.

Manufactured by the Ichthyol Co., Hamburg (Merck & Co., New York).

ICHTHOFORM.

ICHTHYOL FORMALDEHYDE.

A compound of ichthyol and formaldehyde.

It is a dark brown, practically odorless, and tasteless powder. It is permanent and insoluble in the usual solvents.

Actions and Uses.—Ichthoform is said to be antiseptic and antiphlogistic. It is reported to be efficacious in arresting intestinal decomposition and inflammation, whilst non-toxic.

It is recommended internally in intestinal sepsis and externally in endometritis, in ozena, and in wounds, ulcers, etc.

Dosage.—Internally, 0.6 to 2 Gm. (10 to 30 grains), in powders taken plain, or suspended in gruel or cacao, or as a "shake" mixture; externally as pure powder, as 30 to 50 per cent. triturations, or as 10 to 25 per cent. ointments.

Manufactured by the Ichthyol Co., Hamburg (Merck & Co., New York). German patent No. 107,233.

ICHTHYOL.

AMMONIUM SULPHO-ICHTHYOLATE. AMMONIUM ICHTHYOL SULPHONATE. AMMONIUM-ICHTHYOL.

Ichthyol consists largely of the ammonium salts of sulphonic acids derived from the tar of a bituminous shale which is found in the Tyrol and which contains the remains of many fossil fishes. The exact composition and nature of ichthyol is still doubtful.

It is prepared by dry distillation of the bituminous mineral, sulphonating the crude volatile oil obtained with concentrated sulphuric acid, removing the excess of sulphuric acid by repeated precipitation with strong brine, and saturating the ichthyolsulphonic acid with strong ammonia.

Ichthyol is a brown, viscid liquid, translucent in thin layers, having a bituminous odor and taste. It is soluble in water and in mixtures of equal volumes of alcohol and ether, but insoluble in the last two liquids by themselves. It is miscible with glycerin, oils and fats. It contains about 10 per cent. of sulphur in natural combination, and a further 7 per cent. introduced by the sulphonation.

Ichthyol is precipitated from its aqueous solutions by acids, and the dark, resinous mass thus formed is soluble in ether and in pure water, but not in dilute acids or in salt solutions. The fixed alkalies develop the odor of ammonia, and if the mass is then dried and carbonized, the residual mass gives off hydrogen sulphide on addition of hydrochloric acid. When dried on a water bath it yields about 55 per cent. of residue.

It is incompatible with acid and saline solutions, fixed alkalies, their carbonates and iodides, alkaloidal salts, mercuric chloride, etc.

Actions and Uses.—Ichthyol penetrates the unbroken skin and, it is claimed, acts as a vasoconstrictor on mucous surfaces. It has an antiseptic action and is believed to act as an alterative in consequence of the sulphur which it contains.

It is recommended internally in phthisis, skin diseases, gout, scrofula, nephritis, etc. Externally it has been applied in erysipelas, burns, chilblains, carbuncles, rheumatism, ivy poisoning, etc., also in uterine and vaginal inflammation, gonorrhea, etc.

Dosage.—Internally, 0.2 to 2 Cc. (3 to 30 minims) mostly in simple solution in water, or peppermint water, sometimes in the form of pills or capsules. Externally, in vaginal, uterine or rectal suppositories, in 0.06 to 0.12 Cc. (1 to 3 minims) bougies, or 1 to 3 per cent. solution for gonorrheal treatment.

Manufactured by the Ichthyol Co., Hamburg (Merck & Co., New York). German patent No. 35,216. U. S. trademark.

ICHTHYOLUM AUSTRIACUM.

PETROSULFOL.

A product obtained by the sulphonation of a mineral oil having a large natural sulphur content, neutralization with ammonia, and deodorization and purification by dialysis.

Actions and Uses.—These are claimed to be identical with those attributed to ichthyol.

Manufactured by G. Heil & Co., Tropau.

IODIPIN.

IODIZED SESAME OIL, MERCK, TEN PER CENT.

Iodipin is an iodine addition product of sesame oil containing 10 per cent. iodine, in organic combination.

It is prepared by the action of iodine chloride on sesame oil in sufficient quantity, theoretically calculated, to produce the required iodization.

It is a yellow, oily liquid, having a purely oleaginous taste. It is insoluble in water.

If to 1 Cc. of iodipin in 10 Cc. of chloroform a few drops of phenolphthalein test solution are added, the addition of one drop of half normal potassium hydroxide V. S. should produce a red color (limit of acidity).

Estimation of iodine: 3 Gm. of iodipin are saponified by heating with 5 Gm. of potassium hydroxide and 25 Cc. of alcohol. The solution is evaporated to dryness on the water bath and the residue carefully incinerated. The residue is extracted with water and the washings filtered into a Topf distilling apparatus. Then 10 Cc. of hydrochloric acid and 10 Cc. of ferric chloride solution are added and the liberated iodine distilled with the usual precautions into a solution of potassium iodide. Finally the iodine is determined by titration with tenth normal sodium thiosulphate solution V. S. and the per cent. of iodine calculated.

Actions and Uses.—Iodipin acts in the system similar to the iodides, being broken up in a manner analogous to that described under bromipin, which see. Its action is more lasting and with less tendency to iodism.

Manufactured by E. Merck, Darmstadt. (E. Merck & Co., New York). German patent No. 96,495.

(*To be continued.*)

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THE EFFECT OF STRENUOUS EXERCISE ON THE HEART AND KIDNEYS.

The active campaign against football which was in progress last season, and which had as its result a modification of the rules, was set in motion by the deplorably great number of gross physical injuries incident to the game. The question as to what effects of a less tangible character violent exercise of this character produces is one which, though it has occasionally been considered, has hardly received the attention it deserves. It has been believed, in a general way, of course, that many well-known athletes die young, but scientific observations on the cardiovascular and renal changes in athletes, extending over years, are sadly lacking.

The question is brought up again by the recent observations of Baldes, Heichelheim and Metzger[1] on the contestants in a twenty-mile walk. The facts which were brought out were not altogether new, though some data were added to the older ones of Leube, MacFarlane and others. The lesions produced by the excessive exercise were, in brief, the appearance in the urine in almost all cases of albumin, often accompanied by casts and at times by blood; a decided decrease in the arterial tension, associated with some enlargement of the heart, and decrease or absence of the tendon reflexes. In two or three instances the observers were able to see contestants some days after the walk, and in these individuals it was noted that the heart and kidneys had returned to normal. These results, so far as the urinary changes are concerned, correspond to those of Leube, who examined soldiers after long marches, and to those of MacFarlane, who examined football players before and after games. The new facts brought out by Baldes and his associates indicate a decided effect on the heart, and incidentally on the blood pressure, and also some effect on the nervous system, as shown by the changes in the deep reflexes.

The weak point in these observations is, as above stated, that they do not extend over a sufficient period of time. Do such changes when brought about at frequent intervals, as they must be in football players, for example, tend to leave behind them permanent structural changes in the organs most involved? So long as we are ignorant of the actual changes which occur it will be hard to answer this question. Is the heart lesion an acute dilatation? As eminent an authority as Schott believes that it is, though this view is opposed by good authority. The character of the kidney lesion which produces the albuminuria and cylindruria has led to much discussion. Leube regards the albuminuria as physiologic, but it must be confessed that clinicians are yearly becoming more and more skeptical regarding albuminuria so described. The urinary picture is that usually associated with an acute nephritis. The albuminuria can hardly be associated with changes in the blood pressure, as this is lowered, and, furthermore, the volume of blood is probably lessened by the profuse sweating. It may be that the excessive muscle work produces toxins which affect the kidneys. At any rate this has been suggested.

The whole matter is one which is capable of study and which is important enough to be studied. In colleges, especially, the physicians who are in charge of the physical side of the students' development should be able in a few years to solve the questions here brought up.

1. Münch. med. Wochschr., 1906, vol. liii, p. 1865.

CONTAGIOUSNESS OF LATE SYPHILIS.

There has always been a feeling of so much repulsion with regard to syphilitic lesions of any stage that this of itself has been sufficient to make people take precautions against possible inoculation. There has been a definite persuasion in the minds of most physicians that the later lesions of syphilis, that is, those occurring more than two years after the initial lesion, are not capable of conveying the disease. This has been considered particularly true with regard to the gummatous lesions which occur after the disease has run a course of several years. It is not always easy to distinguish absolutely between secondary and tertiary lesions, but gummata have always been considered as belonging to the third stage, and as being essentially non-contagious. In recent years some doubts of this have been expressed, and now it would seem that a sufficient number of cases have been collected to prove that there is enough danger of contagion to make the taking of proper precautions after contact with such sores a matter for serious consideration.

It is true that exposure to tertiary lesions has not been followed in a great many cases by infection. An explanation of this as was pointed out by Dr. Charles Mallory Williams[1] in an article on the "Contagiousness of Gumma," it may be found in the facts that tertiary lesions are much rarer than secondary, constituting less than 5 per cent. of all cases of syphilis in large clinics; that tertiary lesions are often single, while secondary lesions are usually multiple, thus adding to the danger of contagion; and finally, that tertiary lesions occur on portions of the body as a rule from which infection does

1. Medical Record, July 14, 1906; abstracted in The Journal A. M. A., July 28, 1906, page 305.

not readily take place. Only slightly more than 7 per cent. of all syphilitic patients in Neumann's clinic had tertiary lesions on the genital organs. All these conditions lower the possibility of infection to a considerable degree and have undoubtedly been of great influence in producing the impression that tertiary lesions are never contagious.

There is scarcely an authority in venereal diseases, however, who has not seen one or more cases in which the only possibility of the explanation of the occurrence of syphilis was contagion from tertiary lesions. Among those who have reported such cases are Fournier, Jullien, Bumstead, Brandis, Neisser, Finger, Lassar, Ehlers, Brouardel, Gron and Bovero. Fournier and Lassar have reported more than one case in which they were satisfied that there had been a conveyance of syphilis from a tertiary lesion. This is quite enough to require that we should be conservative at least with regard to the contagiousness of such lesions. It is true that, as a rule, attempts to inoculate syphilis into monkeys by means of the products of tertiary lesions failed in the hands of the French observers, and especially of Metchnikoff, though inoculations from secondary lesions were very frequently successful, but the German observers Finger and Neisser report several positive inoculations with tertiary material so that both of them have been ready to concede that gummata are caused not alone by the toxins of syphilis, as they used to think, but are also probably due to the action of the causative micro-organism of syphilis.

As might be expected, the broken-down material of a gumma probably does not contain actively infectious material. The micro-organism of syphilis seems to be very delicate in this matter and continues to exist only in thoroughly vital tissues. It is well-known that inoculations of syphilis from dead bodies, either in the course of autopsy or later in the dissecting room, have never been reported.

As some of the autopsies on syphilitic subjects have been undertaken within a few hours after death, and occasional accidental injuries have been produced during such autopsies, yet without positive results, it would seem clear that the microbe of syphilis dies almost simultaneously with its host. It would not be surprising then that it should not be found alive and vigorous in the devitalized portions that make up so much of the gummatous lesion. At the most it would be only at the very edge of the gumma where this shaded off into healthy tissues that the microbe might continue to live. This may account for the fact that so far the spirochete which is coming to be rather generally accepted as the micro-organism of syphilis has not been found in gummatous tissues. It may also account for the infrequency of infection from such tissues.

It is clear, however, from the present state of our knowledge in the matter, that there has probably been over confidence in the supposed non-virulence of tertiary lesions, and that hereafter greater care will have to be exercised by the physician himself, for some of the reported cases of contagions were in physicians, and that it will be necessary to insist that patients should take greater care to avoid the possibility of infecting others while in this stage of syphilis.

PALLIATIVE SURGICAL OPERATIONS IN CHOKED DISC.

Three recent articles from most competent men (Spiller and Frazier,[1] Starr[2] and Horsley[3]) emphasize the importance of surgical procedures—palliative and radical—in the treatment of cases of intracranial disease in which the symptoms are those of general brain pressure. One point especially brought out in these papers is the very great importance of early surgical interference when, as often exists in these cases, the optic nerve is involved. In his consideration of palliative surgical procedures, Horsley says: "In no case of optic neuritis (not, of course, of toxemic or anemic origin) should the process be allowed to continue after it has once been diagnosed, and if blindness results therefrom the responsibility is very heavy on any one who fails to advise such a simple procedure as opening the dura mater." Starr does not insist so emphatically on palliative operations, but he quotes encouraging cases. Spiller says that palliative operations should be performed early in every case in which symptoms of brain tumor are pronounced and before optic neuritis has advanced far, especially when syphilis is improbable or when antisyphilitic treatment has been employed.

Of course, palliative operations are useless, so far as the optic nerve and its function are concerned, if they are delayed until optic neuritis has become advanced. In deciding on this point Horsley says: "Yellowish-white stippling, patches of exudation or opal white atrophic changes, especially when associated with macular figures, indicate that the secondary changes in the disc are likely to be permanent and therefore, in proportion to their development so the vision will be impaired; whereas when the loss of vision has been dependent simply on the swelling of the disc then not only is the sight saved, but largely improved."

In these papers striking cases are quoted, showing the good effects of palliative surgical procedures on the optic nerve and vision, and also in the relief or lessening of all the pressure symptoms, including the headaches. Cases are also quoted which show the result of a lack of proper surgical interference. Horsley quotes the case of a woman who developed symptoms of brain tumor with acute optic neuritis and who was told that nothing could be done surgically. Subsequently, and after some treatment with the iodids the neuritis subsided into

1. Spiller and Frazier: THE JOURNAL A. M. A., Sept. 1, 8, 15, 22.
2. Starr, M. Allen: THE JOURNAL A. M. A., Sept. 22, 1906, p. 926.
3. Horsley, Sir Victor: Brit. Med. Jour., 1906, p. 411.

complete atrophy and blindness, while the cerebral lesion gradually retrogressed. Unfortunately it is given to every ophthalmologist to see such cases.

Another very unfortunate class of cases exists. In some of the cases with brain pressure symptoms, the condition does not bring about death for several years, while blindness may occur fairly early in the process of the disease and thereby the final months of life of these patients be made more miserable.

Horsley says, and it is true, that the gravity of the responsibility in these cases does not seem to be generally recognized. The three papers mentioned here will attract wide attention and will force on many men a realization of the proper course to pursue in dealing with the optic neuritis in these cases.

PRESIDENT ELIOT ON THE FUTURE OF MEDICINE.

The longer formal addresses at the recent dedication of the Harvard Medical School are noteworthy productions. President Eliot discusses in a most intelligent and sympathetic manner "The Future of Medicine," and Professor Welch, with his customary broad grasp and clearness, dwells on "The Unity of the Medical Sciences."[1]

President Eliot lays stress on the fact that in the past the physician devoted himself very largely to the treatment of diseases already developed and injuries already incurred. There will always be need for services of this kind and for medical schools to fit men for such service. But in the future more than in the past the medical profession must concern itself with the prevention of disease. Hence the study of the causes of disease and of the means of prevention must be continued with increasing energy. Not only must liberal provision be made for scientific investigators to make discoveries and create new knowledge, but medical men must see to it that intelligent practical application is made of the new knowledge for the protection of the health of human beings in all sorts of climates and environments. It is not enough that the epochal work of Reed and his colleagues proved how yellow fever is communicated—for years physicians must teach the people of the South how they now can protect themselves successfully against yellow fever.

This brings us to the point in the address on which we wish to place particular emphasis, namely, the new function of the medical profession of teaching the people in general directly how diseases are caused and how prevented. In this work a beginning has been made, as witness the campaign against tuberculosis in particular. This function must be extended, and President Eliot calls on the medical schools to provide popular expositions concerning water supplies, foods, drinks, drugs, the parasitic causes of disease, and modes of communication of all communicable diseases. Museums and popular lectures are needed. "Selected physicians should become popular teachers, as well as private practitioners." In this work should be enrolled the intelligent and unselfish country practitioner as well as the college professor and the health officer.

President Eliot's concluding remarks in regard to the broad character of the education necessary to fit men for the practice of modern medicine and for successful medical investigators show, like the other parts of his address, a truly remarkable grasp of the needs of medicine and he merits well the eulogy pronounced on his work in behalf of medical education by Professor Welch: "To have recognized fully from the beginning of his administration the importance of the vitalizing union of the medical school with the university, to have striven patiently with full grasp of the problems and with intelligent sympathy with the needs of medicine for the uplifting of the standards of medical education, and, with the aid of his medical colleagues, to have planted these standards where they now are in the Harvard Medical School, is not the least of the many enduring services which President Eliot has rendered to American education."

1. Both addresses appear in full in *Science*, October 12, and THE JOURNAL contained abstracts in its full report of the dedication, October 6, p. 1113.

A COUNTY BACTERIOLOGIST.

A noteworthy appointment has recently been made by the authorities of Ontario County, New York, namely, that of a county bacteriologist at a salary of $1,500 a year. The *Medical Times*,[1] from which we learn of this innovation, points out that this is probably the first appointment of its kind in the country. Ontario County has a population of 50,000, the largest city being Geneva, with 11,000. The rest of the population is largely agricultural. Special legislation was necessary in order to make the appropriation; the appointment was nonpolitical, and the services of the bacteriologist are to be free to all the physicians of the county, under the supervision of the health officers. Ontario County is worthy of commendatory congratulations for this wise and beneficial action, which other counties will do well in studying with a view to doing likewise. Only by some such arrangement as this will it be possible to secure for all the people in rural communities and smaller cities the immediate practical benefits of bacteriology and pathology in the diagnosis and treatment of disease, and in questions of public health and sanitation. By the prompt discovery of an outbreak of typhoid fever or of diphtheria, and the application of modern preventive measures, the county bacteriologist may prevent financial loss to the community in comparison with which the outlay for his salary and laboratory is quite insignificant, to say nothing of the far more important result in the conservation of health and life. It seems quite natural that with time the office of county bacteriologist will expand naturally so as to include also the kinds of work that would fall to a county pathologist. The two kinds of work are so closely related that it is difficult to imagine their practical separation at this time. To the county bacteriologist, or pathologist, whatever name he be called (pathologist is perhaps more comprehen-

1. October, 1906.

sive), would be referred not only bacteriologic work for diagnostic and other purposes, but also such work in microscopic and chemical diagnosis, e. g., of suspicious growths, pathologic exudates, urine, blood, etc., as many physicians find they can not themselves do satisfactorily. The county pathologist could be called on also to perform autopsies in medicolegal as well as in other cases. There is then a large field of usefulness for the county pathologist and the county laboratory, without limitation in any manner of the work of the ordinary practitioner, which, however, this new office would render more effective and more accurate. The general educational influence and the stimulus to better work on the part of physicians that would come from the county laboratory should not be overlooked. We hope that Ontario County may find many imitators and that county medical societies will discuss this matter with a view to the necessary education of public sentiment.

THE CHICAGO MEAT INSPECTION REGULATIONS.

During the active agitation about the pure food laws and the exposures at the Chicago stockyards, the Chicago Medical Society appointed a committee to investigate the regulations for meat inspection at the Chicago Union Stockyards. That committee has now made its report, which is printed in the *Bulletin of the Chicago Medical Society*, October 15. The report states that the regulations are more rigid in general than those of other countries and include all, or nearly all, the precautions that the committee considers essential for the protection of the public, with possibly a suggestion that they might be a little more strict as regards animals suffering from hog cholera or swine plague. In some particulars, as in regard to actinomycotic abscesses, they consider them unnecessarily rigid, and the same is true as regards the condemnation of hogs suffering from localized tuberculosis, the carcasses of which, they think, might safely be used for lard by rendering at high temperature. It would certainly appear from the general tenor of their report that the Chicago regulations are certainly efficient for the protection of the public against diseased meats. The committee publishes as an appendix letters from such authorities as Drs. Welch of Johns Hopkins, Theobald Smith of Harvard, E. O. Jordan of the University of Illinois, J. G. Rutherford, veterinary director-general of Canada, and others, indorsing the opinions expressed in the report. In Dr. Welch's letter emphasis is laid on the importance of special training and competence of meat inspectors, and the committee gives its endorsement of the recommendation and insists on the necessity of more ample educational provisions and better remuneration for this important work. With our present system of municipal appointments, perfect fitness is not assured, even in the better remunerated positions. With the government inspection, however, under the new law, it may be assumed that thoroughly adequate methods will be followed and that American meats will be exceptionally safeguarded as compared with those from other sources throughout the world.

THE ALLEGED INCREASE OF INSANITY.

A London physician, Dr. Forbes Winslow, is the alleged authority for the statement that the world is going mad and that if the present rate of increase of insanity continues, as it seems likely to, the sane individual will soon be the exception and not the rule. He is said to support his opinion by statistics, but statistics are sometimes queer things. It will be remembered that Mark Twain once figured out that at the rate of shortening that the Mississippi was undergoing, according to statistics, the cities of New Orleans and St. Louis were bound to be united, and it may be that insanity statistics can be used in the same way. We should be rather inclined to think that the world is growing saner, that its standards of sanity, as well as of morals and other things, are becoming more exacting, and that the great apparent increase of mental disorders can be accounted for, at least in part, by this fact. We recognize and segregate the insane more than ever before and have shifted a not inconsiderable number of those who were formerly regarded as simply criminals, and punished as such, into this category. It is the more general recognition of the exceptional character of insanity that helps to make its apparent increase the more noticeable. That there is an increase in the number of the insane can not be denied; the crowding into cities, with the consequent greater stress of life and other abnormal social conditions, are probably largely responsible, and in this country we have, in addition, the disturbing factor of immigration which is responsible for a large proportion of the population of our asylums. We may be overdoing the matter in the present phases of our social progress, but we may feel reasonably sure that an acceptable equilibrium will be reached before things get to the worst. Even now there are communities in which the increase has apparently come to a standstill. Insanity is a problem of the day, but it is not so much of one as the alarmists would have us believe.

CHEYNE-STOKES RESPIRATION.

The peculiar type of periodic respiration first accurately described by the great Irish clinicians has long been known to the profession as a not infrequent accompaniment of certain forms of uncompensated heart disease and of cerebral compression. The sign, *per se*, so far has not been of any great diagnostic significance, though from the standpoint of prognosis it has usually been regarded as a distinctly unfavorable portent, often unjustly. It has been universally held that the mechanism of the sign, though obscure, was doubtless the same in all cases, no matter what the character of the primary disease. The recent work of Eyster[1] is of interest in this connection, as it shows that the form of Cheyne-Stokes breathing which accompanies cerebral compression differs from that which occurs in connection with cardiac and renal diseases. In Cheyne-Stokes respiration due to cerebral compression, the period of respiratory activity is associated with a rise in blood pressure, while in that due to the other conditions the rise in blood pressure corresponds to the period of apnea. The observa-

1. Bull. Johns Hopkins Hosp., September, 1906; also Journal of Experimental Medicine, 1906, vol. viii, p. 565.

tion may have more than theoretical importance, for it can be imagined that in semi-conscious patients with this form of breathing the relation between the blood pressure and the phase of respiration may incline the clinician to regard the condition as cerebral or otherwise as the case may be.

Medical News

COLORADO.

New Hospitals.—The Santa Fe system has decided to erect a new hospital at La Junta, to cost $30,000.——The La Junta Sanitarium Association contemplates the erection of a new hospital to accommodate 25 patients and to cost about $11,000.

Medical Women Give Luncheon.—The Women's Medical Society, Denver, gave a luncheon to the women members of the Colorado State Medical Society, October 12. Covers were laid for 25, and Dr. Kate Lindsey, formerly a medical missionary in South Africa, gave an address.

Health of Colorado Springs.—Dr. P. Oliver Hanford, health commissioner of Colorado Springs, reports a death rate for August of 15.37 per annum. Only one case of scarlet fever was reported during August, and less typhoid fever than obtained in the corresponding month of last year.

ILLINOIS.

Hospital Burns.—The Isolation Hospital, Granite City, was burned October 16, with a loss of $1,500.

Sanitarium Incorporated.—Dr. Broughton's sanitarium at Rockford has been incorporated, with a capital of $40,000, by Dr. Russell Broughton, J. T. Robertson and R. K. Welch.

Smallpox at Galesburg.—At present there are five cases of smallpox at Galesburg, with three foci of infection. The special need of the city is an isolation hospital, which will probably be built in a short time.

To Establish Psychopathic Institute.—A most important conference of state officials and others interested in public philanthropy was held under the auspices of the State Board of Public Charities at Springfield, Oct. 18 and 19, 1906. The result of its deliberations promises a marked advance in the method of administering the public charitable institutions of the state. Following the recommendations of the board, the following general plan for improving the efficiency of institutions for the care of the insane was discussed and the more important recommendations approved:

1. State care of all insane, epileptics and feeble-minded now in county almshouses; and of dependent consumptives, calling for the establishment of a state village for epileptics and a state sanatorium for consumptives.

The superiority of state care is urged since some counties can provide only the most primitive arrangements, while under state supervision every patient could have the advantage of modern equipment and expert care. Attention was called to the fact that the presence of epileptics among insane patients is mutually detrimental, and segregation of consumptives among the insane and in prisons was recommended.

2. Uniform local administration by a medical general superintendent in charge of each hospital with senior physicians, paid internes, superintendents of nurses and sufficient nursing and attendant staff taught in a compulsory high-grade training school; and a dietetist, on the medical side; and a stewart or business manager, under the medical general superintendent, on the business side.

3. Hydrotherapeutic treatment for acute hopeful cases of insanity.

4. More ample hospital provision for physically sick insane.

5. Industrial reëducation for chronic types of insanity.

6. More amusement and recreation for patients.

7. The abolition of mechanical restraint and soporifics as far as possible.

8. Pay patients.

9. Uniform medical and other records.

10. More thorough classification of patients.

It is suggested that the senior physicians should be competent to take charge of special departments and that one at least should be a woman and one a surgeon with special experience in gynecology. The internes should include a dentist with proper mechanical skill and equipment. The training school for attendants should have as one of its principal functions the elimination of unfit employés and the abolition of improper methods. The dietetist should have charge of the preparation of food, thus avoiding undue waste in this direction as well as in the purchase of food.

11. Creation of a state psychopathic institute.

This is to be a teaching institution and to be attached to one of the state hospitals with ample clinical and laboratory facilities. It is to be presided over by an expert in psychic physiology and pathology, who will be able to give instruction and inspiration to the physicians in charge of the various hospitals and to advise and assist them in their scientific work. Each hospital should be provided with a laboratory and better facilities for autopsies should be afforded. But one such institution has been established in this country while there are 22 in Germany.

12. An additional institution for the feeble-minded, including feeble-minded women of the child-bearing age. The feeble-minded should be classified into improvable and custodial cases; the present asylum for feeble-minded children was established for the improvable class, but has been forced to take custodial cases.

13. Consideration of physical changes to provide adequate ventilation and to put all buildings and equipment into satisfactory shape. Survey of the various asylums shows that with one exception they fall considerably short of furnishing the amount of air space desirable, the average shortage being 191 cubic feet per patient.

14. It is proposed to change the name of the Asylum for Incurable Insane to the General Hospital for the Insane.

15. Consideration of systems of charity administration for state institutions.

16. The establishment of uniform grades of service, with maximum and minimum salary limits in each grade; of uniform general rules, with special rules issued by the superintendent to cover local needs; and of a uniform nomenclature of positions of employment.

Dr. George Zeller, superintendent of the Bartonville Insane Asylum, objected to the use of mechanical and medicinal restraint of insane patients, and advocated the repeal of the Illinois statute which legalizes mechanical restraint. The conference passed a resolution recommending the establishment of a psychopathic institute, and it is stated that such an institute will be established either at Elgin or Kankakee. The necessary funds will be taken from the general appropriation until a special appropriation can be secured for this purpose. Committees were appointed as follows:

State Care, Including New Institutions: Miss Lathrop, Dr. Webster, Dr. E. Evans, Dr. Churchill, Mrs. Bourland.

Medical Administration and Uniform Records, Internes: Dr. McAnnally, Dr. Podstata, Dr. Wilhite, Dr. Davis.

Hydrotherapy and Industrial Re-education and Recreation: Dr. Podstata, Dr. McAnnally, Dr. Carriel, Dr. Sanger.

State Psychopathic Institute: Dr. Greene, Dr. Podstata, Dr. W. E. Taylor.

Improvement of Buildings and Grounds and Equipment: Dr. Emil G. Hirsch, Dr. Zimmermann, Dr. W. E. Taylor.

Problem of the Feeble-Minded: Mrs. Bourland, Dr. C. B. Taylor.

System of Charity Administration: Dr. Hirsch, Miss Lathrop, Dr. McAnnally, Mrs. Bourland.

Uniform Grades, Rules, Salaries and Nomenclature: Mr. Moulton, Dr. Athon, Dr. Podstata, Dr. W. E. Taylor.

Local Business Administration: Dr. Hirsch, Dr. Greene, Dr. W. E. Taylor.

Special Committee on Joliet Prison: Dr. Hirsch, Dr. Webster, Mr. Zimmermann.

Chicago.

Donations to Charities.—At the quarterly meeting of the Schwabenverein donations amounting to $1,150 were made to the hospitals of Chicago.——By the will of the late Adolph Loeb $500 was bequeathed to the Michael Reese Hospital and $250 to the Alexian Brothers' Hospital.

Deaths of Three Quarters.—During the nine months ended September 30, 21,651 deaths were reported, an increase of 916 as compared with last year, and an increase of 1.4 per cent. in the annual death rate. Pneumonia caused 3,003 deaths; consumption, 2,444; Bright's disease, 1,592; heart diseases, 1,522; violence, 1,322, and cancer, 1,002.

Personal.—Dr. Edmund J. Doering has returned from Europe.——Dr. J. S. Clark has finished his services as interne at the Illinois Charitable Eye and Ear Infirmary and will practice in Freeport.——While making a hurry call in South Chicago, October 18, the ambulance was overturned and Dr. Sidney McLeod, the ambulance physician, was severely cut and bruised.

Deaths of the Week.—During the week ended October 20, 539 deaths were reported from all causes, equivalent to an annual mortality rate of 13.72 per 1,000. The deaths numbered 11 more than for the preceding week and 73 more than for the corresponding week of 1905. Heart diseases caused 59 deaths; acute intestinal diseases, 54; consumption, 52; pneumonia, 47; nephritis, 45; violence (including suicide), 40. There was an increase of 4 deaths from diphtheria as compared with the preceding week, and three times as many deaths from scarlet fever.

Warning Concerning San Francisco Refugee.—THE JOURNAL is asked to warn the profession against a man who is said to represent himself as Dr. L. Lloyd Shaw. He tells a hard luck story of being burnt out in San Francisco and asks a little financial aid to send his wife to some neighboring town where her friends live—or for other equally legitimate purposes. He claims to have been employed on newspapers for some years and sometimes represents that he has just obtained a job on one of the Chicago daily papers. He seems undisturbed when informed that his story is exactly like that which is often heard from dead beats. He dresses well, is about 5 feet 9 inches in height, weighs about 150 pounds, is smooth shaven, has dark hair streaked with gray, and an eye that rarely looks one in the face. He says that he graduated from Rush Medical College in the year 1886. That name is found in the list of that class, but without any address. One of the members of that class states that there was such a man in the class who was doing newspaper work at that time.

INDIANA.

Donation to Hospital.—St. John's Hospital, Anderson, has received $10,000 bequeathed by the will of the late John Hickey.

Medical Library.—Arrangements have been made by the Vigo County Medical Society to use a room in the basement of the new library building, Terre Haute, where its library of more than a thousand volumes will soon be installed.

Medical College Opens.—The formal opening of the Indiana Medical College, Medical Department of Purdue University, took place October 4, before a mass-meeting of the entire student corps at Indianapolis. Dr. Henry Jameson, dean of the medical faculty, delivered the address and introduced the president of the university, Dr. E. W. Stone, who also addressed the meeting.

Physicians Ill and Injured.—Dr. Lowery H. Bear, Vevay, went to Cincinnati for an operation for appendicitis, October 7.——Dr. Franklin W. Cregor, Carthage, was thrown from his buggy in a runaway accident October 5, and sustained severe cuts, bruises and lacerations.——Drs. Charles Houghland and Barton, Milroy, and Dr. Albert J. Shauck, Arlington, were thrown from an automobile going at a high rate of speed October 1, but, fortunately, were only slightly injured.

Communicable Diseases.—Smallpox has appeared in Richmond and all the children in the school which the affected child attended have been ordered to be vaccinated.——Owing to the prevalence of scarlet fever the public school of Westfork was ordered closed October 5 by the health authorities. The disease thus far is mild in form.——A district school in Clay Township has been closed on account of an epidemic of scarlet fever. Thus far 15 cases have been reported in the school.

Personal.—Dr. Joseph F. Somes, Vincennes, has been appointed surgeon for the Vandalia Lines, vice Dr. William H. Davenport, resigned.——Dr. Reuben H. Leavitt has assumed charge of the female medical department, Dr. Alaric T. Payne of the male medical department, and Dr. Leon J. Willien of the gynecologic department of St. Anthony's Hospital, Terre Haute.——Dr. Edward T. Griffith, Muncie, has returned from Alaska.——Dr. G. E. Fulton, Bluffton, returned from Europe, October 8.

September Diseases and Death.—Cerebrospinal meningitis was extraordinarily prevalent in September, 50 deaths being reported. There were nine fewer typhoid deaths than in September, 1905, but more cases were reported. The disease exists in every county of the state, usually in mild form. Rheumatism came next in order of prevalence, and then followed tonsillitis, diarrhea, typhoid fever, cholera morbus, cholera infantum, bronchitis and dysentery. Pneumonia was reported thirteenth in order of prevalence and influenza was fifteenth. Five cases of smallpox were reported in nine counties, with 2 deaths. Pneumonia caused 93 deaths, or 45 less than for the corresponding month of 1905; consumption caused 291 deaths; cancer, 95; violence, 196; diarrheal diseases, 426, and diphtheria, 31. The board has issued a circular to all counties, urging that antitoxin be furnished free to people unable to pay for it, and sounds a strenuous note of warning urging the early use of antitoxin as a curative and prophylactic measure in diphtheria.

KANSAS.

Donation to Hospital.—Mrs. M. J. O'Mara, Tonapah, Nev., has sent to Dr. George Emerson, Winfield, a donation of $1,000 for St. Mary's Hospital.

Sanitarium Opens.—The Independence Hospital and Sanitarium, under the charge of Dr. Frank W. Shelton, opened for the reception of patients, October 1.

Personal.—Dr. Andrew L. Skoog, assistant superintendent of the Parsons State Hospital Asylum, has resigned to accept a similar position in Colorado. He will be succeeded at Parsons by Dr. Hubbard.

Against Unlicensed Physicians.—The Franklin County Medical Society is making a determined fight against unlicensed practitioners. One "cancer doctor," it is reported, has been found guilty and been fined $50, and it is announced that other arrests will follow.

Disease Prevalence.—During August the State Board of Health reports 209 cases of typhoid fever, with 32 deaths; 71 cases of tuberculosis, with 31 deaths; 47 cases of diphtheria, with 7 deaths; 32 cases of scarlet fever, with 2 deaths, and 29 cases of smallpox and 22 cases of measles, with no deaths. With the exception of measles, August, 1906, shows a very material falling off in contagious diseases.

Communicable Diseases.—The physicians of Iola state that the epidemic of typhoid fever has begun to abate.——Diphtheria is reported to have broken out in Montana Township, Labette County. There are 17 cases of diphtheria among the school children and two of the ward schools have been closed on this account.——Diphtheria is reported to be gaining a strong foothold in Leavenworth.——Two of the public schools of Emporia have been closed on account of the prevalence of diphtheria.——The city schools of Lawrence have been closed as a precautionary measure, on account of an epidemic of diphtheria.——The Union Heights public school in Burns was closed September 28 on account of the prevalence of diphtheria. During September, 28 cases of diphtheria were reported in Topeka, one less than for the same period of 1905.

MARYLAND.

Baltimore.

Lectures on Psychology.—Dr. James N. Baldwin, of Johns Hopkins University, Baltimore, on October 20 began a course of lectures on "Educational Psychology," before the teachers of the Baltimore schools.

Personal.—Dr. John M. Bergland has returned from a trip to Indian Territory.——Dr. Thomas J. O'Donnell was badly bruised by being thrown from his carriage in a runaway accident, October 13.——Dr. William H. Battsell has returned from Europe after an absence there of two and a half years.——Dr. Lewellys F. Barker was elected president of the Johns Hopkins Medical Society, October 15, and Dr. Rufus I. Cole, secretary.——Dr. Charles W. McElfresh was elected president of the University of Maryland Hospital Medical Society, October 6.

MASSACHUSETTS.

Diphtheria.—In the Avon Home for Children, Cambridge, 22 out of 30 children have been attacked by diphtheria. In eight of the cases the patients were so ill that they were removed to the city contagious hospital.

Janet in Boston.—Prof. Pierre Janet of Paris, on October 15, gave the first address, of a course of 15 lectures at the Harvard Medical School, on "Classical Symptoms of Hysteria." Three lectures are to be given each week, and are open to all medical students, practitioners, advanced students and teachers of psychology.

Milk Inspection.—The milk inspector of Boston reports that his department has examined 20,653 specimens during the last year, and that of 5,559 specimens tested for bacteria, more than 10 per cent. showed pus, or streptococci, or both. The number of suits brought against the milk department is not quite so large as last year.

Communicable Diseases.—One of the rooms in the Coverly School, Malden, has been closed by the Board of Health on account of the prevalence of diphtheria.——Typhoid fever is reported to be prevalent in Natick, South Natick, Wellesley and Needham, and impure milk is assumed by the State Board of Health to be the cause of the outbreaks.

New England Alumni.—At the meeting of the New England Alumni Association of Albany Medical College, held in Boston, October 9, Dr. Harvey W. Van Allen, Springfield, was elected president; Dr. Creighton W. Skelton, Providence, R. I., vice-president; Dr. Alfred H. Hoadley, Northampton, treasurer, and Dr. Walter G. Murphy, Hartford, Conn., secretary, the two latter being reëlected.

College Opens.—Tufts College Medical School has opened for its annual session. Dr. Frederick J. Cotton has been appointed assistant professor of clinical surgery; Dr. Gardner W. Allen has resigned as assistant professor of genitourinary diseases, and Dr. Charles M. Whitney has been appointed lecturer and Arthur L. Chute instructor in this department. Dr. H. Warren White has resigned as assistant professor of theory and practice of medicine.

Personal.—Dr. Frederick E. Jones, Quincy, has been appointed medical examiner of the county of Norfolk——Dr. Walter B. Cannon has been appointed George Higginson professor of physiology and Dr. W. T. Porter professor of comparative physiology in the Harvard Medical School.——Dr. Hentve, Pottstown, has been appointed superintendent of the Framingham Hospital and Training School for Nurses.——Dr. Walter J. Marcley, superintendent of the Massachusetts Sanatorium for Consumptives, Rutland, has been appointed provisionally to take charge of the Minnesota State Sanatorium for Consumptives, Walker.——Dr. Fred M. Stiles has succeeded Dr. Henry D. Chadwick, resigned, as president of the Waltham Medical Society.

MICHIGAN.

Pesthouse Robbed.—The pesthouse of Ironwood was broken into a few nights ago and a considerable amount of bedding stolen.

Academy Election.—The annual meeting of the Detroit Academy of Medicine was held October 9, and Dr. Delos L. Parker was elected president, Dr. Andrew P. Biddle, vice-president, and Dr. Harrison D. Jenks, secretary-treasurer (reëlected), and Dr. Arthur H. Bigg, director.

Communicable Diseases.—The health officer reports that there are at present 9 cases of scarlet fever in Muskegon.——The health officer of Lansing reports 7 cases of smallpox, which are under quarantine.——Several cases of measles have been discovered in Kalamazoo Street School, Lansing.

Will Not Reinstate College.—The State Board of Registration in Medicine, it is reported, has removed the name of the Michigan College of Medicine and Surgery from its list of schools whose graduates are qualified to be examined by the board. On October 10 Dr. Hal C. Wyman appeared before the board to protest against this action, but the board refused to make any change, on the ground that the conditions complained of last June have not been altered during the summer vacation.

Vital Statistics.—The deaths reported in August were 3,237, an increase of 458 over July, and an increase of 446 over the corresponding month of 1905. This was equivalent to an annual death rate of 14.3 per 1,000. Of the decedents, 868 were infants under one year of age and 777 were individuals more than 65. Tuberculosis caused 224 deaths; typhoid fever, 45; diphtheria, 29; scarlet fever, 12; measles, 8; whooping cough, 43; pneumonia, 63; diarrheal diseases, 548; meningitis, 40; cancer, 150; and violence, 266. During the month 3,969 births were reported, equivalent to an annual birth rate of 18.1 per 1,000.

Personal.—Dr. William M. Bailey, Detroit, who was seriously injured in a street-car accident, has so far recovered as to be able to be taken to his home from the hospital.——Dr. and Mrs. Alexander G. McLeod, Calumet, are at present in California.——Dr. James A. Ardiel, Grand Rapids, has returned from Great Britain.——Dr. Fannie L. Draper, Jackson, sails this month for Foo Chow, to take charge of the Methodist Hospital in that place.——Dr. O. M. Vaughan, Covert, has been reëlected president of the Van Buren County Superintendents of the Poor.——Dr. Charles J. Sorsen, Laurium, has returned from a trip abroad.——Dr. J. Harry Cox has resigned as assistant mining physician at Painesdale, for the Champion Mining Company.——Dr. W. Cahn, Saginaw, has been appointed as assistant to Dr. A. D. Aldrich, Winona.

MISSISSIPPI.

College Opens.—The Mississippi Medical College, Meridian, was formally opened for its first annual session, October 1, with about 100 students in attendance. Dr. William W. Hamilton, president of the college faculty, called the assembly to order and addresses were delivered by the Hon. Hardie R. Stone, Dr. Nathan L. Clarke of the faculty, and E. M. Monies and R. A. Venable of the board of trustees. Dr. N. L. Craig is dean of the faculty; Dr. William W. Hamilton, president; Dr. Thomas A. Barber, vice-president; Dr. W. O. Bethea, secretary, and Dr. Thomas J. Houston, secretary-treasurer.

Extension for Insane Hospital.—The trustees of the Mississippi Insane Hospital, Meridian, have awarded the contract for a small dormitory, a four-room cottage and a hospital building for the asylum, the latter to cost about $20,000.

Von Gohren's Estate.—The estate of the late Dr. Ludwig H. Von Gohren, who died last month, at Bay St. Louis, has been appraised at $20,000.

MISSOURI.

Opening of Medical College.—The Ensworth-Central Medical College, St. Joseph, opened for its annual session September 15.

Phthisis Sanatorium.—It is proposed by the officials of Kansas City to establish a tuberculosis sanatorium, outside, but near the city, so that sufferers from tuberculosis who become public charges may be cared for. A site is being considered on the highlands in Clay County, overlooking the Missouri River. It is estimated that the farm can be purchased and the sanatorium equipped at an initial cost of not more than $4,000.

Contagious Diseases.—The Eugene Field School, East Joplin, has been closed on account of exposure to diphtheria.——One case of smallpox has developed in the State Industrial Home for Girls, Chillicothe. The building has been fumigated and all the inmates have been ordered to be vaccinated.——The public schools of Pacific were closed October 3 on account of diphtheria.——An epidemic of scarlet fever is said to be prevalent in the northern part of Jasper County and many country schools have been compelled to close.

Personal.—Dr. Christopher C. Morris, superintendent of the St. Louis Baptist Hospital, has returned from Europe, and was given a banquet by his medical associates October 1.——Dr. George O. Coffin, Kansas City, has returned from Europe.——Dr. D. E. Wilhelm has been appointed assistant police surgeon of Kansas City, vice Dr. George P. Pipkin, resigned.——Dr. Herbert A. Goshorn has been appointed assistant house surgeon at the Kansas City General Hospital.

Hospital Items.—The Kansas City General Hospital is expected to be under roof before cold weather sets in. Provision is to be made for a temporary heating plant for the winter.——The official reception of the Ellen M. Osborne Hospital, St. Louis, was held September 25.——A jubilee service was held at the Mayfield Sanitarium, St. Louis, when a $15,000 mortgage was burned by the surgeon-in-chief of the institution.——An informal reception was held October 20 at the new hospital of the St. Louis and San Francisco Railroad, St. Louis. The building is of fireproof construction and thoroughly equipped. A novel feature in the institution is that inclines take the place of stairways and can be used by the patients either for walking or for rolling chairs. The kitchens and dining rooms are located on the top floors. Dr. George W. Cale, chief surgeon of the Frisco System, transferred his office from Springfield to the new hospital September 18, and the hospital was opened for patients October 22.——The addition to the Deaconess' Hospital, St. Louis, was dedicated with imposing ceremonies September 20. The cost of the building with the furnishings will exceed $90,000 and the building will accommodate 90 patients.

NEW JERSEY.

Brouwer Not Guilty.—After a long trial Dr. Frank Brouwer, Tom's River, indicted for murder of his wife by poisoning, was found not guilty, October 17.

Genet Taylor Honored.—The Camden County Medical Society tendered a banquet to Dr. H. Genet Taylor, October 9, at which Dr. E. L. B. Godfrey responded to the toast of the honored guest. Dr. Joel W. Fithian presided.

Sanitary Inspector Poisoned.—Dr. Charles Cunningham, sanitary inspector of the Hammonton board of health, is ill from ptomaine poisoning, due, it is said, to a can of salmon.

Local Society Organized.—The physicians of Vineland have organized the Vineland Medical Society, with Dr. Theodore Foot, president; Dr. George Cunnigham, vice-president, and Dr. John H. Winslow, secretary-treasurer.

Health Conference.—The first annual conference of the state and local boards of health of New Jersey was held in the state house, Trenton, October 19 and 20. The conference was in charge of Dr. C. F. Brackett, president of the State Board of Health, and the chief subjects discussed were:

Every sanitary district should be provided with an isolation hospital.

Abandoned wells should not be used as receptacles for sewage and waste liquids.

Disinfectioon of infected apartments may be secured by washing floors, woodwork and furniture with bichlorid of mercury, 1-1,000,

by the destruction by fire of articles of little value, by boiling of infected wash goods and by treating woolen garments to exposure for 12 hours to formaldehyd.

Infectious diseases should be reported to the local board of health and patients should be isolated.

Local boards of health can render valuable service in preventing the sale of unwholesome milk and in the legislation for the abatement of nuisances. Only those nuisances can be attacked which have caused or may cause sickness or death, or which are prohibited by the law.

Smoke nuisances and noise nuisances have not been proved directly to affect the public health.

Joint municipalities of small population should join in the appointment of a health officer. Among the important duties of boards of health is the periodic inspection of all buildings in their respective jurisdictions, to detect insanitary conditions. Ordinances to prevent spitting on the floors of public buildings or public conveyances, on sidewalks and street crossings should be passed and enforced by every sanitary district.

Measures for prevention of the spread of infectious diseases, except in very rare instances, should not include the closing of schools, churches and public buildings.

NEW YORK.

New York City.

New Hospital Building.—The New York Infirmary for Women and Children is raising money for a new hospital building, promises of over $94,000 having been received. The present building has 70 beds, a dispensary and a large outdoor department. Last year 1,043 patients were treated in the hospital, 45,389 in the dispensary and 8,968 visits were made to homes of patients.

The Carpenter Lecture.—Dr. Harvey Cushing, Baltimore, delivered the Wesley M. Carpenter lecture at the Academy of Medicine October 18. His subject was "A Discussion of Some Early and Some Late Complications of Cranial Injuries and Their Treatment. Based on the Histories of Three Illustrative Cases." On this occasion the portrait of the late Dr. Paul F. Mundé, painted by Mrs. Mundé and presented by Dr. A. Jacobi, was presented to the academy.

Contagious Diseases.—There was reported to the sanitary bureau for the week ended October 13, 390 cases of tuberculosis, with 169 deaths; 205 cases of diphtheria, with 22 deaths; 113 cases of typhoid fever, with 15 deaths; 73 cases of scarlet fever, with 1 death; 50 cases of measles, with 2 deaths; 33 cases of whooping cough, with 11 deaths; 5 cases of cerebrospinal meningitis, with 4 deaths; and 9 cases of varicella, a total of 878 cases, with 224 deaths.

New Hospital Pavilion.—A new pavilion to St. Luke's Hospital was opened October 18. The wing is called the Margaret J. Plant Pavilion, after the widow of Henry Bradley Plant, who contributed $450,000 of the $600,000 which the pavilion cost. The purpose of the pavilion is two-fold: that patients of wealth may have the advantages of skilled hospital treatment, and that the money derived from this source may be devoted to free wards. The ward will accommodate 75 patients, and it is possible for those wishing to be cared for luxuriously to pay as high as $350 per week for accommodations. The new building occupies one of the most commanding sites in the city, overlooking Morningside Park, and is built in the French Renaissance style.

The City Milk Supply.—The health commissioner, Dr. Darlington, after spending a week in making inspections of the dairies throughout the state, is of the opinion that the milk supply of the city is better than it ever has been. So far as the inspections go, there is an improvement of 100 per cent. over the conditions last year, and New York is now receiving purer and better milk than ever before. While the Board of Health does not condemn pasteurization, it believes that the only real safety for the consumer lies in a pure supply in the beginning, as pasteurization does not destroy the bacilli of tuberculosis. The fact that milk is sold in 25,000 places in New York and that the daily consumption is about 1,500,000 quarts, makes it evident that the thirty inspectors now employed are not adequate to the task of inspecting all milk. While the number of inspectors has been doubled during the past year, there is still work for a much larger corps.

NORTH CAROLINA.

District Society Meeting.—Dr. James A. Burroughs, Asheville, councilor for the tenth district, has issued a call for a meeting of delegates from each county society in the district, to be held at Asheville, November 5, to organize the Tenth District Medical Society.

Personal.—Dr. J. Howell Way, Waynesville, has been appointed supervising state medical examiner for the Royal Arcanum.——Dr. H. Q. Alexander, Davenport, state senator from Mecklenburg County, is seriously ill with typhoid fever.——Dr. John R. Carr, Durham, has gone to Vienna to study.——Dr. Armstead K. Tayloe, Washington, was operated on at the Washington City Hospital for appendicitis, October 9.

Hospital Notes.—Mr. W. F. Snyder, Salisbury, has donated property valued at $13,000, with the sole restriction that the site shall be used permanently as a hospital for the people of that city. An additional subscription of $7,000 was quickly secured and work on the erection is to begin immediately.——The new Rutherfordton Hospital was formally opened for reception of patients, October 10. It will be under the charge of Drs. Henry Norris and Montgomery H. Biggs, Philadelphia.

OHIO.

Fined for Illegal Practice.—On October 3, "Dr." L. K. Stoddard, New York City, said to be an itinerant cancer specialist, charged with the illegal practice of medicine, was fined $25 and costs at Columbus.

Addition to Hospital.—As the present quarters of Mercy Hospital, Columbus, are overcrowded, the directors are planning to build an addition containing 50 rooms. The cost of the building will be about $20,000.

Communicable Diseases.—Typhoid fever is reported to be epidemic at Kenton and Greentown, and a number of cases are reported from Toledo.——Diphtheria is reported to be epidemic at Clifton, Cincinnati, Cleveland and Springfield.

Medical Library Open.—The Cleveland Medical Library Association opened its addition to the library building, October 7. The building contains a fireproof room for storing valuable goods and an auditorium seating about 300 people. The cost of the addition has been about $20,000.

To and from Europe.—Dr. Alexander M. Steinfeld, Columbus, has returned from Europe.——Dr. Alfred S. Maschke, Cleveland, has returned after a year's absence abroad.——Dr. Ode E. Portman, Canton, sailed from Rotterdam, October 6.——Dr. Henry S. Sheffield, Elyria, left September 17 for Europe.

State Board Officers Elected.—At a meeting of the State Board of Medical Registration and Examination for reorganization, the following officers were elected: Dr. Harris H. Baxter, Cleveland, president; Dr. August Ravogli, Cincinnati, vice-president; Dr. George H. Matson, Columbus, secretary; and Dr. Sylvester M. Sherman, Columbus, treasurer.

Alumni Organized.—The Cincinnati Chapter of the Alumni Association of Miami Medical College organized October 1, with the following officers: President, Dr. William H. Campbell; vice-presidents, Drs. Abram D. Murphy, Mrs. Frances J. Iliff, Clayton B. Conwell and G. K. Dennis; secretary, Dr. George S. Mytinger, and treasurer, Arthur J. Markley.

District Association Meeting.—The third annual meeting of the Tenth District Medical Association was held in Lancaster October 4. The following officers were elected: President, Dr. W. Stanley Samson, Lancaster; vice-presidents, Drs. Ralph W. Holmes, Chillicothe; W. P. Snell, Mount Vernon, and Argus B. Swisher, Marysville; and secretary-treasurer, Dr. John H. J. Upham, Columbus.

Colleges Open.—The Cleveland College of Physicians and Surgeons opened for its annual session, October 24. The principal address was given by Prof. G. O. Headley, Ohio Wesleyan University, on "Chemistry as a Servant of the Medical Profession."——The opening exercises of Toledo Medical College took place October 1.——The Medical Department of Western Reserve University, Cleveland, opened for its regular session October 1.

Personal.—Dr. James T. Hanson, Gallipolis, has been appointed superintendent of the Athens State Hospital.——Dr. Van Wagner, Bridgeport, has been appointed health officer to fill the unexpired term of the late Dr. William M. Oates.——Dr. Elias C. Logsdon, Zanesville, is reported to be seriously ill with diphtheria.——Dr. J. Garfield Alcorn, physician to the state penitentiary, Columbus, has resigned to take up private practice.——Dr. Henry Baldwin has been appointed health officer of Springfield, vice Dr. John M. Buckingham, deceased.——Dr. James B. Dougherty is ill with typhoid fever at his home in New Berlin.——Dr. Albertus C. Wolfe has been elected professor of therapeutics in the Ohio Medical University, Columbus, vice Dr. Theodore W. Rankin, who has taken the chair of medicine, in place of Dr. George M. Waters.——Dr. Hunter H. Powell, Cleveland, director of the medical staff of St. Anne's Maternity for 25 years, was given a complimentary banquet, September 25, by his associate physicians, at which the Sisters in charge of the hospital presented him

with a silver loving-cup.——Dr. C. F. Reiff, Fremont, has been appointed a member of the Board of Public Service, vice Dr. Martin Stamm, resigned.

PENNSYLVANIA.

Home Selected for Criminal Insane.—The selection of the site in Wayne County for the State Hospital for the Criminal Insane was approved by Governor Pennypacker, October 17. The land selected is composed of 625 acres and was secured for the nominal consideration of $5. The land was really the gift of the Delaware & Hudson Railroad Company, and is located at Far View, 20 miles from Scranton. Culm banks on the land will, it is said, yield coal enough ot supply the institution for 20 years. There is an abundant flow of pure water from springs and small streams. The greatest elevation is 2,000 feet above sea level.

State Asylum Crowded.—The report of the State Hospital for the Insane, Norristown, shows that the buildings are entirely inadequate to the demands. In the present female buildings the normal capacity accommodates 985 women patients, but 1,277 are being cared for. The condition of the male department is still more crowded, and for the 1,255 patients only 128 attendants are available. The admissions to the institution are rapidly on the increase, and only two improvements have been made by the state during the last four years. In the building assigned to violent women, which was originally constructed to accommodate 80 patients, 229 are now being treated.

Philadelphia.

Medical Club Meeting.—At the quarterly reception and meeting of the Medical Club, October 20, Drs. Edward Anthony Spitzka and George McClellan, the recently elected professors of anatomy in Jefferson Medical College, were the guests of honor. Officers were nominated, to be balloted for in January.

Bequests.—Bequests of $3,000 each were made to the following named institutions by the will of the late George W. Fox: Friends' Asylum for the Insane, Little Sisters of the Poor, and the Home for Aged and Infirm Colored People.——By the will of the late Julius Streeter, the Protestant City Mission receives $6,000.

Personal.—Sir Almroth E. Wright, M.D., F.R.S., London, delivered a lecture in the College of Physicians, October 22, on "The Treatment of Bacterial Diseases by the Inoculation of Corresponding Vaccines."——Dr. David Birney was thrown from his carriage October 14, and painfully injured.——Dr. DeForest Willard, who has been ill for several months, has recovered and is now at Hot Springs, Va.

Health Report.—The total number of deaths reported for the week aggregated 469. This is a decrease of 24 from the number reported last week, and an increase of 71 over the number reported in the corresponding week of last year. The principal causes of death were: Typhoid fever, 13; diphtheria, 13; consumption, 60; cancer, 21; apoplexy, 15; heart disease, 53; respiratory disease, 45; enteritis, 24; Bright's disease, 39; suicide, 4; accidents, 11, and marasmus, 9. There were 202 cases of contagious disease reported, with 29 deaths, as compared with 202 cases and 19 deaths in the preceding week.

VIRGINIA.

Arrested for Selling Cocain.—Eight negroes were arraigned at Alexandria, October 13, to answer the charge of selling cocain.

Personal.—Dr. A. S. Priddy, Bristol, has been appointed superintendent of the Southwestern Hospital for the Insane, Marion, vice Dr. Robert J. Preston, deceased.——Dr. John E. Harris, Berryville, has been appointed local surgeon for the Norfolk and Western Railway.——Dr. James F. Bryant, Franklin, has been appointed surgeon-general of the first brigade, Virginia Division, United Confederate Veterans, vice Dr. John H. Claiborne, Petersburg, deceased.

Colored Society Election.—The second annual session of the Dominion Medical and Surgical Society ended at Richmond October 4. The following officers were elected: President, Dr. Charles R. Alexander, Petersburg; vice-presidents, Drs. Robert J. Boland, Roanoke, and R. A. Michael, Surrey; corresponding secretary, Dr. Harrison L. Harris, Richmond; recording secretary, Dr. J. A. Crowder, Petersburg; treasurer, Dr. Robert E. Jones, Richmond, and journalist, Dr. Edward R. Jefferson, Richmond. The society considered subjects relative to the hygiene and sanitary conditions of the colored people, and the questions of tuberculosis, malaria and other diseases which increase the death rate among the urban colored population.

WEST VIRGINIA.

Leper Dies.—George Raschid, the Assyrian leper, whose travels through West Virginia and Maryland a few months ago came near causing serious complications between the authorities of these states, died in a shanty near Pickings, W. Va., from heart disease, October 19. The body is said to have been cremated in the shanty in which he had lived, by order of the county authorities.

GENERAL.

Alvarenga Prize.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga prize, being the income for one year (about $180) of the bequest of the late Señor Alvarenga, will be made on July 14, 1907, provided that an essay deemed worthy of the prize shall have been offered. Essays may be on any subject in medicine, but can not have been published. They must be typewritten, and must be received by Dr. Thomas R. Neilson, secretary of the college, on or before May 1, 1907. Each essay must be sent without signature, but marked with a motto and accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author.

CANADA.

University News.—Sir Wilfrid Laurier, prime minister of Canada, has made the University of Laval the beneficiary of an insurance policy on his own life for $5,000. His example will probably be followed.——The dominion government will be asked to grant $25,000 to further equip the biologic and bacteriologic departments of Queen's University, Kingston.

Winnipeg Medical Society.—The first regular meeting of this society was held October 5, when the president, Dr. Gordon Bell, delivered the annual presidential address. The following officers were elected: President, Dr. E. W. Montgomery; vice-president, Dr. J. R. Davidson; second vice-president, Dr. N. J. McLean; secretary-treasurer, Dr. C. H. Vrooman; councilors, Drs. McKenty, MacKay, Galloway and Todd.

Hospital News.—Winnipeg General Hospital treated 397 patients during the week ended October 13; 237 were men, 127 women and 33 children. The out-patients numbered 85.——The Winnipeg Isolation Hospital is quarantined with 25 smallpox patients.——Dr. Alex. Campbell, superintendent of the Winnipeg General Hospital, who has been ill with appendicitis for two weeks, is again attending to his duties.——Virden (Man.) Hospital was opened October 9.——A new hospital is to be established at Selkirk, Man., and the subscriptions now amount to $4,200.——Dr. F. Montizambert, director-general of public health, Ottawa, is at Victoria, B. C., in connection with improvements to the leper hospital at D'Arcy Island.

Quebec and Reciprocity with Great Britain.—The College of Physicians and Surgeons of Quebec, at a meeting held September 26, took the first step toward securing reciprocity with Great Britain, as provided for in the General Laurie Amendment (1905) to the British Medical Act, by adopting the following resolutions, the latter of which having appended to it the subsequent proviso:

Resolved, That the College of Physicians and Surgeons of the Province of Quebec beg the legislature of the Province of Quebec at its coming meeing to send a request to his majesty's privy council demanding the application of the Medical Act of 1886 and the amendments of 1905 to the Province of Quebec.

Resolved, That on a favorable answer from the privy council, the College of Physicians and Surgeons of the Province of Quebec enter on the necessary negotiations with the General Medical Council of Great Britain, in order to assure the establishment of reciprocity between Great Britain and the Province of Quebec:

Provided, That those who, having obtained the British license and are demanding the license of the Province of Quebec, shall, prior to their British registration, have fulfilled all the requirements of our medical act in regard to the obtaining of our license.

The idea of this proviso is designed to prevent "irregulars" in the province of Quebec crossing the Atlantic and securing registration in Great Britain and then returning and demanding and compelling their registration in the Province of Quebec.

Canadian Societies Oppose Low Insurance Fees.—The *Bulletin Médicale de Québec* for September contains reports of several county society meetings in which the question of life-insurance fees was taken up. The Arthabaska society postponed the discussion until greater harmony on the subject prevailed, but the Portneuf society adopted a resolution fixing the minimum rate for a life-insurance examination at $5 and for a lodge at $2. The societies at Joliette, Beauce and Chicoutimi have taken similar action, and several members of the Joliette society reported that the insurance companies had paid the fee without protest. The Portneuf secretary writes

that in certain districts where this fee is in vogue the insurance agents take "ambulant physicians" with them to make the examinations, who charge only $3 or less for their services. He adds: "We are not acquainted yet with this race of ambulant physicians, but its existence seems to be established. We are told that it originated in the cities. Those who have had opportunity to study specimens of this new species close at hand write that they have the same appetites, the same manners and the same customs as charlatans. At the risk of attracting some specimens of this new species into our domain the society proposes to adopt the new tariff, although it will not go officially into effect until the next meeting of the society. In the meanwhile the members are free to adopt it individually at any time." A proposal was received from the Joliette society asking that the members of all the neighboring county societies agree to publish their articles in the same medical journal, so that by subscribing to this journal a complete file of the proceedings of the various medical societies can thus be kept. The proposal was rejected as too exclusive a measure.

FOREIGN.

The Schaudinn Endowment.—The German Dermatologic Society, at its recent annual congress, appropriated $1,250 to be presented to the Schaudinn endowment fund, and also voted to have the volume of its transactions dedicated: "In Memoriam Fritz Schaudinn," with a reproduction of his portrait.

Behring's Tulase Reported Ineffectual.—Bernheim of Paris is the president of the *Oeuvre de la Tuberculose Humaine*. He created a sensation at the recent Antituberculosis Conference by reading an article describing his examination of a number of patients who are being treated by Krehl with Behring's tulase. Krehl himself was away on a vacation, but Bernheim was given every opportunity to examine the patients, study their clinical charts, etc., and he announced that the tulase treatment had evidently proved completely ineffectual.

Unsuspected Leper Town in Portugal.—The cable states that the town of Castroverde, 50 miles from Lisbon, attracted the attention of the authorities by its high death rate. Medical experts sent to investigate the cause found 127 cases of leprosy among the inhabitants, the disease never having been recognized before, and no measures having been taken to isolate those affected or to prevent their going to other towns. The place has been quarantined now, and the entire country is on the alert to discover cases of leprosy elsewhere.

Seventieth Birthdays of W. Waldeyer and E. von Bergmann.—Waldeyer's seventieth birthday was celebrated by his friends October 6, but von Bergmann's does not occur until December 16. Waldeyer's works embrace nearly every field of morphology, and he was the first to proclaim that the cancer cell is an epithelial cell, which conception Virchow did not accept. Waldeyer's name is familiar from his numerous topographic works, his collective reviews of various subjects, his successful career as a teacher, his faithful attendance at all medical anthropologic and anatomic congresses, and his devoted services to the local scientific societies. The *Deutsche med. Wochschr.* for October 4 gives a sketch of his career, with his portrait.

Vital Statistics in Constantinople.—According to the Constantinople correspondent of the *Lancet*, the new and energetic prefect of Constantinople, Réshid Pasha, is about to introduce a sanitary reform, which, if realized, will prove to be of great service to the population of the Ottoman metropolis. He intends to reorganize the public service of vital statistics which up to now has been in a very unsatisfactory condition, and to introduce sanitary statistics of a more regular and precise character. The sanitary inspectors of each municipal district will henceforward have to furnish exact information concerning the different infectious diseases. The precise number of persons suffering from these maladies will also have to be recorded and much greater attention will be paid to the rate of mortality. A Turkish newspaper states that it is desirable to include in this sanitary reform the whole Ottoman empire and to enjoin on the provincial sanitary inspectors the duty of sending to the prefecture of the capital regular monthly reports concerning the vital statistics of their vilayets.

The Rémond Nursery at Lyons.—An endowed institution has recently been opened at Lyons to receive healthy babies born prematurely or under weight from other causes. The institution is connected with an outlying public convalescent home, and all the infants born at the maternities in town under normal weight are sent there and nursed at the breast, under constant medical oversight, until they reach the average weight for infants of their age. There are three buildings, each entirely separate and arranged for eight wet nurses and 16 nurslings. The nurses are mothers from the maternities who are paid a small sum daily for each child they nurse, both their own child and the foster child. The most scrupulous care is taken to exclude every possible chance of infection, the mere suspicion of syphilis or other contagious disease in the mother or child excluding the infant from the "Nourricerie." In case infection should occur in one of the buildings, that one can be closed and disinfected without interfering with the workings of the institution as a whole. The way in which the infants thrive is the most eloquent testimony to the value of such an institution, the nurse, her child and the foster child, all prospering far beyond the average, according to Plauchu's report in *Obstétrique* for September.

Plague Conditions in Calcutta.—Consul-General Michael, Calcutta, reports that the most prominent feature in the plague history of Calcutta is the alarming recrudescence of the disease, the mortality from which having declined from 8,222 in 1903 to 4,689 in 1904, again rose to 7,011. Other disappointing features of the year's plague history were the increased virulence of the disease and the conspicuous increase of mortality in the sparsely populated areas to the south of the town. The measures taken to combat the disease underwent considerable alteration during the year. A large staff of medical inspectors was employed to investigate the cause of all deaths in the city from whatever cause, and these investigations throw considerable light on the causes of general mortality. The demolition of plague-infected huts has been abandoned, because, in the absence of any arrangements for rehousing the dislodged population, demolitions aggravated the evils of overcrowding in the vicinity of operations. A satisfactory feature of the year's work was the far larger percentage of living cases ascertained. The statistics of the year's work confirm the facts previously reported in regard to the small number of houses in which plague infection occurs. Even in the case of houses in which more than one death occurred the infections were generally simultaneous. It is noteworthy also that the mortality in kutcha huts was about double that in masonry houses, where most of the cases occurred on the ground floor. The reason may possibly be that infection is more easily carried on mud floors than on masonry plinths, which can be more thoroughly cleansed. Little success was attained in the crusade against rats, although various methods of destruction were employed. Little progress was also made with inoculations, which are still unpopular. The question whether it is possible to pass by-laws under the municipal act to compel owners of grain godowns to make them rat proof has been referred to the advocate-general for his opinion.

Second International Congress for the Insane.—This congress was held recently at Milan, Tamburini presiding. Marie of Paris delivered an address on the necessity for farm colonies for the insane, for epileptics and for backward adults. Lucien-Graux urged the establishment of special public institutions for the hospital care of the nervous, public sanatoria for the nervous in hygienic sites, open to anyone without previous declaration. A resolution proposed by Mariani was adopted urging that in countries in which the mild cases of insanity are not yet boarded out in families, a committee of alienists, appointed by the government, should draw up a set of plain, simple, detailed instructions, explaining the essence and the aims of "familial assistance" of the insane, and that a copy of these instructions should be placed in the hands of every country physician, without exception, with the request that he should inform the rural population in regard to the matter and use his influence for the adoption of the system and to further its workings. Another resolution urged the care of persons predisposed to insanity, and of persons dismissed from asylums, facilitating their return to normal work and watching over the moral and material welfare of their families, coördinating for this purpose the efforts of the charitable municipal and medical organizations. Another resolution urged the fusion of the various organizations that care for the insane, for backward children, alcoholics and criminals, as there are so many connecting links between them, and combined effort will be much more effectual. The fifth resolution was devoted to special prophylactic and curative measures in regard to the tuberculous insane, both those boarded out in families and those in asylums. The sixth resolution asked that mentally deficient children should receive special medico-pedagogic training. On the recommendation of Frank of Zurich it was voted to organize an international committee for the etiologic study of and for prophylactic action in regard to nervous and mental affections and the causes entailing them.

The committee will organize an international institute for these purposes, and will strive to obtain the coöperation of the various governments to complete and coördinate investigation into the causes of degeneracy, so as to propose remedies. The transactions of the congress are being published in the *Archives de Neurologie* and other special journals.

LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Oct. 13, 1906.

A Villa Asylum for Lunatics.

Lord Roseberry opened at Bangour, in Linlithgowshire, an asylum which the lunacy board of Edinburgh has erected on the villa or segregate system for the care of the city's insane poor. This is the first complete example in Great Britain of this form of asylum. Accommodation will be provided for 1,000 inmates.

Body Exhumed as the Result of an Unfounded Attack on a Physician.

An inquest has been held under extraordinary circumstances on the body of a widow, aged 63, who died Dec. 1, 1905. About two months ago the body was exhumed and an inquest was held, which was adjourned. The exhumation took place at the request of the brother of the deceased, who made an affidavit that the physician was in a great hurry to get the body buried. As a matter of fact, the burial took place six days after death. The brother also stated that he believed that the death of his sister was due either to administration of improper drugs or to incorrect treatment. At the inquest the doctor stated that he had first treated the woman in 1898 for dyspepsia. Three years later symptoms of cardiac degeneration set in. In 1904 Dr. Rose Bradford saw the patient with him and entirely agreed with his treatment. As to the funeral, he had nothing to do with it. Evidence was given by Dr. Willcox, analyst of the home office, and Dr. F. J. Smith, professor of forensic medicine at the London hospital, that the body showed no indications whatever of poisoning. The jury returned a verdict that the certificate of death given by the doctor was perfectly correct and that there was no ground for the imputations made.

The Specificity of Agglutinins.

Dr. Sidney Martin, F.R.S., reports experiments undertaken to determine whether the agglutins formed in the rabbit in response to infection with the colon bacillus, the typhoid bacillus, the paratyphoid bacillus and the *B. proteus vulgaris* have any effect on each of the other microbes. He finds that the agglutinin of the *B. proteus vulgaris*, although very active against this microbe, has no action against the other bacilli mentioned. The *B. proteus vulgaris* is, therefore, widely separated from the other three bacilli not only by its culture and chemical characteristics, but also by the agglutinins it forms in the living body. The other bacilli show some overlapping in their agglutinating reactions. Thus the agglutinin of the typhoid bacillus formed after prolonged treatment of the animal reacts slightly with the colon bacillus and with the paratyphoid bacillus. In most cases, however, the reactions were incomplete. The agglutinin of the colon bacillus reacted very slightly with the typhoid bacillus and not at all with the paratyphoid bacillus. The agglutinin of the paratyphoid bacillus, on the other hand, reacted slightly with the typhoid bacillus and more markedly, though somewhat irregularly, with the colon bacillus.

Identification of Skin Bacteria.

Dr. M. H. Gordon has endeavored to establish a bacteriologic test by which particles shed from the skin may be detected in air. This test is based on the fact that although a variety of staphylococci occur on the skin there is no staphylococcus which on the application of differential physiologic tests shows characteristics permitting of its ready distinction from other staphylococci. This organism occurs far more frequently than any other variety. It frequents the epidermis of the hand, cheek, scalp and forearm with such persistency that it may be considered characteristic thereof in much the same way that *B. coli communis* is characteristic of the large intestine, and *brevis* of the mouth. Dr. Gordon believes this staphylococcus to be identical with the organism observed by Welch and named by him *Staphylococcus epidemidis albus*. Dr. Gordon also describes another staphylococcus which he finds particularly abundant on the scalp. It possesses characters by which it can readily be differentiated from other staphylococci, and it is particularly serviceable in detecting particles of scurf. Dr. Gordon examined outdoor and indoor air with the view of determining whether his tests could be relied on for detecting in air the presence of skin particles detached from the human body and obtained very encouraging results. On three occasions he examined open air for staphylococci characteristic of skin. Although seventeen different kinds of staphylococci were obtained, not one of them could be identified with *Staphylococcus epidermidis albus*. On the other hand, this staphylococcus was obtained in the air of barber shops and in the air of an operating theater during use.

The Wellcome Research Laboratories.

The second report of the laboratories attached to the Gordon Memorial College at Khartoum and founded by Mr. H. S. Wellcome has been published. The editor and director of the laboratories, Dr. Andrew Balfour, less than three years ago started work at Khartoum with one laboratory boy and two black servants. He is now aided by a chemist, a traveling naturalist, an economic entomologist and two European assistants. Two Carnegie research fellows have been invited to conduct investigations there, the one working on chemical, the other on bacteriologic or pathologic lines. A floating laboratory for collecting museum specimens from the various rivers will soon be organized. The anti-mosquito work is most successful. Originally more than half of the wells and pools were infected; now anopheles and malaria are practically banished and the stegomyia is seldom found. The amount of oil that had to be used per well was found to never exceed half a pint, and even two ounces were found ample if none was lost in splashing. Only six men are engaged in this work under an English inspector, so that for less than $500 per annum Khartoum is kept practically free from malaria and from the perpetual torment of mosquitoes. Dr. Balfour states that 16 genera comprising some 35 species culicidæ have now been found in the Soudan.

The Transmission of Plague by Rats.

In his recently-issued report to the local government board Dr. Klein reports some important experiments on this subject. Most investigators have met with little or no success when they attempted to produce plague in rats or other animals by feeding them with plague cultures or with fresh organs of animals dead of plague. Dr. Klein has repeatedly fed guinea-pigs, rats and mice without positive results. It occurred to him that the reason of the failure was that the bacilli were destroyed by the secretion of the stomach during digestion. He suspected that if the bacillus could reach the small intestine in living state its power of multiplication would not be destroyed, but might, on the contrary, be assisted by the alkaline medium found there. To test this theory, he fed animals with plague bacilli either in a dry state with the food or sufficiently protected to enable them to pass through the stomach unscathed. He used gelatin cultures from two weeks to two months old which had become dried, though they still contained active bacilli. He found that this material either alone or mixed with wheat or rice and then well dried was capable of infecting rats, mice and guinea-pigs fed with it. Similar results were obtained when pieces of plague organs were mixed with wheat, rice or flour and then dried. A considerable proportion of the animals were infected and died between the fourth and sixth days. It was found that the infection took place in the ileum at or about Peyer's glands. In this locality there was hemorrhage with great multiplication of plague bacilli. This condition was found not only in the cavity of the intestine and on the free surface of the mucous membrane, but also within the villi themselves and in all parts of the intestinal wall. It also spread to the mesenteric glands, which in turn infected the vascular system of the other viscera with crowds of bacilli. The intestinal and renal excreta of animals infected in this way contain numerous bacilli. Hence in natural infection such excreta when mixed and dried with foodstuffs provide a ready means of spreading the contagion. These investigations suggest that man may contract the disease through the intestinal tract from ingesting food contaminated with plague material in a semi-dried condition. A similar suggestion has been put forward by Dr. Simpson with regard to the origin of the septicemic form of plague in man. Dr. Klein also investigated the degree of resistance against desiccation which the plague organism exhibits when associated under diverse conditions with various materials, such as foodstuffs, earth and sand. The vitality of the bacillus added to earth and sand in the form of a gelatin culture remained during the autumn for a long time unimpaired—in earth even after seven and one-half weeks and in sand over six weeks. In summer the duration of vitality was not so long. These experiments show the possibility that under natural conditions during plague seasons plague expectoration and intestinal mucus charged with masses of the bacillus may remain infective for a dangerously long period.

VIENNA LETTER.

(From Our Regular Correspondent.)

VIENNA, Oct. 8, 1906.

Vienna from the Medical Student's Point of View.

As a large and constantly increasing number of American physicians come every year to Vienna for the purpose of studying in the extensive hospitals here, a few lines regarding the accommodations, attractions, the facilities for learning and hospital advantages in this city may be useful to those who intend to come here. Vienna, the capital of Austro-Hungary, is a city of 1,980,000 inhabitants, and is situated in the center of a very important line of commerce and travel, thus being the natural place for the government and official bodies. As the number of hospitals and able doctors in the provinces beyond is none too large, numerous cases of disease come voluntarily or are sent by their doctors to the capital, so that the population, whence the hospitals draw their material, may be safely estimated to be upward of 3,000,000. For the army of patients there are altogether nine large public hospitals, so that the educational facilities are fairly centralized and a good supply of interesting cases guaranteed. In parentheses it may be added that the system of private hospitals is hardly known here, so that nearly all the hospital patients come under the heading of those available for instruction. The chief or general hospital, Das Allgemeine Krankenhaus, an ancient building with more than 2,000 beds, in which all the stars of the Vienna medical school used to teach, comprises three clinics each for surgery and medicine, each with about 100 beds; two clinics each for gynecology, dermatology and syphilis, ophthalmology, mental and nervous diseases, and one each for otology, laryngo-rhinology and pediatrics. Apart from these clinical wards, which are devoted specially to the purposes of clinical lectures and teaching, there are surgical, medical and gynecologic wards, and "extraordinary professors," from whose ranks the "regular professors" are chosen. Of the clinical teachers some have a well-known name, like Pollitzer, Schrötter, Chiari, von Noorden, Neusser, Finger, Hochenegg and Fuchs. Many of them not only speak English fluently, but also lecture in the English language in special classes. In the gynecologic clinics, which are united with the maternity department, and are under Professors Chrobak and Schauta, over 8,000 lying-in cases are managed yearly, a number sufficient to supply the student with a good experience.

Besides this general hospital there are the Wiedner Hospital, the Rudolf Hospital and the Poliklinik, connected with the medical department of the university, in which clinical lectures are given also by professors during the "semesters" or terms. The winter semester lasts from October till March 31, the summer semester from May 15 to July 15. The fees for clinical "semester" lectures are low, about $6 being the maximum, while special lectures are more expensive. A very good opportunity for anatomic and dissecting work is offered in the "Anatomisches Institut," under Professors Zuckerkandl and Toldt, for pathologic anatomy and bacteriology in the Pathologisch-anatomisches Institut, under Professors Weichselbaum and Kretz, and for histology of the nerves in the institute of Professor Obersteiner. In these official "institutes" the fees for working and material come to something like $10 to $15 per term of eight weeks. A completely new and modern building is now ready for the study of physiology, under Professor Exner, and ample means for research are provided for those students who desire to devote their time to this branch.

As all the medical teaching is governed by the senate of the medical faculty of the university, and as the university itself is a central institution, there is an enormous advantage in the fact that all the accessory institutions mentioned above are in the same quarter or district of Vienna, called Alsergrund, and are within easy access of each other. In the same district are numerous opportunities for cheap and good lodging. For the last few years this whole part of the district has been used by medical students as lodging quarters, and the tenants of the flats make it their special business to let rooms to this class of lodgers. A good, quiet room may be rented for $8 to $12 a month (there is no weekly payment here) near all the central institutes, and sometimes board may also be obtained for about $30 or $35 a month; but it is possible to get it even much cheaper, so that $8 to $10 per week should cover the expenses of a decent mode of living. There are also private dining houses for medical students, with low prices. Several boarding houses of the English fashion are also to be found in Vienna, but they are, of course, more expensive. For the information of those who are planning to stay in Vienna, I may mention the following streets as suitable and convenient: Spitalgasse, Alserstrasse, Lazarethgasse, Pelikangasse, Kochgasse, Skodagasse, Schlösselgasse, Währingerstrasse and Garnisonsgasse. If board is not obtained with the room, there are good restaurants with excellent food and low prices in these streets, and cafés with their world-renowned Vienna coffee and rolls for 10 cents (equal to 50 hellers or half a krone). A cup of splendid coffee with white rolls may be had at any time, while a good dinner can be had for less than half a dollar, and a supper for 30 cents is very good.

These figures are meant for a good but not luxurious mode of living. Of course, there is no limit for one who wants to spend more. The best way of getting out of culinary troubles is to combine a few gentlemen who are willing to dine together. Some landlady is always ready to cook for them. Gentlemen coming over with their families have also no trouble in finding rooms or furnished flats according to their wishes.

There is an "American Medical Society" in Vienna, in which new arrivals will be cordially received, and where they may obtain information on all subjects concerning lodging, board and medical courses. The seat of this society is in the Café Klinik, corner of Spitalgasse and Lazarethgasse, opposite the General Hospital. THE JOURNAL will be found on file there. The present secretary is Mr. Herrman L. Kretschmer, Schlösselgasse 13/9. The society conducts many lectures and special courses, and nearly all English-speaking physicians in Vienna, both from England and America, are members of the society. Further information may also be obtained at the Pension Welser, Vienna IX, Höfergasse 5, where members of the society meet for their meals. Membership in this society actually means the removal of all difficulties from the path of the newcomer. The best means of getting information is to write to or speak personally with the secretary of the American Medical Society, Vienna IX, Café Klinik, Spitalgasse. For those who wish to read in the library there are two well-equipped libraries. One is the large reading room (Lesezimmer) of the "Universitäts-Bibliothek," comprising about 400,000 books, and the other is the "Aerztliches Lesezimmer" in the hospital, with about 22,000 books and periodicals. English medical works are provided in abundance, and access to these libraries is easily obtained. Gentlemen who wish to spend a longer time in the wards find it not a difficult matter to obtain the post of "hospitant" in the wards. They have the same rights as ordinary hospital officers, but not their duties, and are unpaid. Thus, for instance, the clinics for dermatology, medicine, syphilis, eye diseases and otology are frequented by American "externes" or "hospitants."

As regards the classes arranged by privat docents and various professors, the following may be mentioned: Professor Kovacs has diagnostic classes for internal diseases, $10 for six weeks, very many American students; hematology by docent Türck, $25, four to six weeks; surgery of the genitourinary system, docent Zuckerkandl, $20, four weeks, many English surgeons; gynecology and dermatology, especially for Americans; surgery of the ear by Alexander, Neumann, Hammerschlag, $15 to $20, six to eight weeks. Hajek's classes on rhinology are well known, also those of Chiari and Koschier. The fees are between $20 and $40, including operations on patients. Surgical practice on the cadaver is obtainable as a special course. Urbantschitsch and Pollitzer's classes on otology are well frequented by English-speaking physicians, and Finger's English classes on dermatology are an old-established institution. Furthermore, it is possible to get up a special class for nearly any branch of medicine, if the lecturer is guaranteed a minimum fee of a sum varying between $100 and $150 for the whole class, so that there is a vast opportunity for both practical and theoretical teaching at a low cost to the individual members of the class.

The situation of Vienna amid fine picturesque scenery, within easy reach of the Alps—a two hours' railway ride brings one to the Schneeberg, 5,900 feet high, or to other high mountains—makes it a very pleasant place to live in. The water supply is considered to be among the best if not the best of all large towns, so that typhoid or other water-borne epidemics are actually absent. The death rate for the last decade is constantly declining and stands now at 18.7 per 1,000. The only drawback is the prevalence of tuberculosis, but this may be safely overlooked, as only the poorer classes of the population are affected in a degree higher than in America, while those classes with which the student comes in contact are just as healthy and clean as anywhere else. Vienna is a rich, healthy, beautiful and quaint capital, with unparalleled opportunities for cheap and world-renowned medical education, so that time and money are well spent.

Pharmacology

THE POPULAR SYNTHETIC REMEDIES, THEIR USE AND MISUSE.

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ANN ARBOR, MICH.

[Dr. J. O. Schlotterbeck, a member of the Council on Pharmacy and Chemistry, in a paper read before the Wayne County (Mich.) Medical Society, and published in the *Journal of the Michigan State Medical Society*, calls attention to the increasing employment by the medical profession of various proprietary articles and also mentions the laxity in the use of the word synthetic. From his article we quote:]

It was not uncommon to hear the word used indiscriminately in connection with true synthetics, fictitious synthetics, decomposition products, and even mixtures pure and simple. This is not surprising when we consider that some knowledge of the chemistry of a compound is essential to a proper classification, and further that the terminology of the majority of the army of new remedies is anything but suggestive of composition. In fact, it may be said that many of the titles appended to new remedies have for their chief recommendation brevity and euphony, in addition to an utter lack of significance. Again, owing to the relatively slight attention given to the subject of organic chemistry in medical colleges in the past as well as the present, many physicians are not in a position to distinguish between classes of chemical remedies, even when a scientific or semiscientific nomenclature is employed. A very prominent physician recently expressed his belief that the status and efficiency of the medical profession would be largely enhanced if some of the spectacular courses of present day medical curricula were replaced by more thorough training in the chemistry, pharmacology and prescription of definite chemical compounds. It is needless to say, it is scarcely open to argument in fact, that in this age of synthetic remedies the physician should have at his command a discriminating knowledge of organic chemistry.

But what is a synthetic compound? Let us compare the preparation of a synthetic with the construction of a building, a rather homely illustration, but one which will answer the purpose. Edifices of widely differing architecture are constructed by bringing together not in a heterogeneous mixture, but according to definite plans, a number of structural units more or less different in character. When the buildings are finally completed we have new structures entirely unlike the units of which they were built. They are comparable with the synthetic compounds prepared in the laboratory. Now, if an edifice be demolished and resolved into the original structural units or elements of which it was composed, these units could be compared with decomposition products when a compound is subjected to analysis. Synthetics are made by the established chemical process called synthesis, which is the uniting of simple compounds or elements to produce complex ones. Synthesis is, therefore, a constructive process, the opposite of analysis, which is a destructive or demolishing process.

A scientific illustration of the principles of synthesis and analysis is well exemplified in the investigation of the composition of water, one of the first experiments which the beginner in chemistry performs. By electrolysis water is decomposed into its elements, hydrogen and oxygen, in the proportion of two volumes of the former to one volume of the latter. This you will recognize as the analysis of water. Now, by exploding this same mixture of hydrogen and oxygen with the spark from an induction coil, the elements unite chemically with the formation of water. This is clearly the synthesis of water.

In the domain of organic chemistry the construction of the pharmacopeial synthetic hexamethylenamina, better known by the names urotropin and cystogen, is a little more complex, but readily understood. When a mixture of stronger water of ammonia and solution of formaldehyd in certain proportions is allowed to stand for about twelve hours, a condensation takes place and the famous urinary antiseptic is formed. The reaction takes place according to the following equation:

$$4NH_3 + 6CH_2O = (CH_2)_6N_4 + 6H_2O$$

This is one of the simplest illustrations of synthesis.

Apomorphin is a well-known article of the pharmacopeia, which is often incorrectly classed as a synthetic. When the alkaloid morphin is heated in a sealed tube with strong hydrochloric acid, it is broken up into two new compounds, the base apomorphin, and water, as folows:

$$C_{17}H_{19}NO_3 = C_{17}H_{17}NO_2 + H_2O$$

The identity of the original alkaloid is destroyed and the resulting product is less complex than the morphin. The apomorphin was obtained by a destructive or analytic process, therefore, it can not be called a synthetic product, but rather a decomposition product, or a derivative of morphin, if you wish.

While the chemist uses the word synthesis and, therefore, synthetic for all compounds, whether organic or inorganic, made by the constructive process, the physician and the pharmacist commonly connect the word with organic compounds used in medicine.

There is a firmly established impression among a large class of pharmacists and physicians that all synthetics are coal-tar products. This is far from the truth. A little later I will show that there is a very large proportion not derived from any of the products contained in coal tar. When bituminous or soft coal is subjected to destructive distillation, that is, heated in retorts without excess of air, the compounds originally existing in the coal are split up into simpler ones, some of which are gaseous, some liquid and some solid. The coal gas, when it leaves the retort is passed through water, which absorbs the ammonia, the resulting gas water being our principal source of ammonia. The coal tar was formerly considered a nuisance and could be obtained for the manufacture of sidewalks and pavements at a very low figure. It is still used to a slight extent in my home city for that purpose, but I doubt very much that the average citizen of Detroit gets an opportunity to see and smell coal tar. It is one of the most valuable by-products in the manufacture of coal gas and commands a ready market, because of the valuable constituents it contains.

When coal tar is subjected to fractional distillation that portion of the distillate which floats on water is called light oil. That which has approximately the specific gravity of water, and, therefore, swims in water, is called dead oil, and that which sinks in water is called heavy oil. A further fraction obtained at temperatures as high as 400 degrees C. constitutes anthracene oil from which the parent substance of many coal-tar dyes is obtained. The residue in the retort is pitch, used in making varnishes, etc. This classification of the fractions is not uniform with all producers, some collecting more fractions and others less. Over eighty different chemical compounds have been isolated and identified in the fractions obtained in the distillation of coal tar, but there are only a few of these of great commercial importance because of the cost of separation. The most important products are benzene or benzole from the light oil; naphthalene or tar camphor from the dead oil; phenol or carbolic acid from the heavy oil, and anthracene from the anthracene oil.

It may be of interest to show by materials and formulæ how one of the most popular classes of synthetic antipyretics is developed. When benzene (not benzin obtained from petroleum) is treated with strong nitric acid under certain conditions, the nitric acid radicle NO_2 enters the benzene nucleus or ring and water is split off. The resulting compound is a yellow liquid of bitter almond odor but of altogether different composition from the true oil of bitter almond. This oil is commonly called oil of mirbane and is used to perfume cheap soaps, floor oils, polishing pastes and so on. When this nitrobenzene is reduced by means of Fe and HCl, whereby nascent hydrogen is generated amidobenzene or phenylamin is formed. The common name for this compound is anilin or anilin oil. It is poisonous and was once administered in the form of the sulphate and hydrochlorid as an antipyretic. It was this property of anilin that suggested the introduction of acetanilid. Now by boiling anilin oil with glacial acetic acid, H_2O is split off and the acetyl

group or acetic acid radicle replaces the hydrogen of the amido group with the formation of acetanilid. This is easily purified by recrystallization.

This series of reactions will show how easily and cheaply this synthetic is made:

1. $C_6H_6+HNO_3=C_6H_5NO_2+H_2O$
Nitrobenzene
$C_6H_5NO_2+2Fe+6HCl=C_6H_5NH_2+Fe_2Cl_6+2H_2O$
Amidobenzene or Anilin
3. $C_6H_5NHH+HOOC.CH_3=C_6H_5NH.OC.CH_3+H_2O$
Acetic Acid Acetanilid

By substituting other acids for acetic acid a great variety of derivatives can be made with physiologic action, on the whole the same as acetanilid. If salicylic acid be used in place of acetic acid we obtain salicylanilid; benzoic acid will make benzanilid; gallic acid gallanilid; formic acid, formanilid, and so one. If bromin be substituted for one H in the para CH group, we obtain synthetic asepsin; with iodin, iodacetanilid; if the CH_3 group be substituted for H in the NH group, exalgin is obtained.

The manufacture of phenacetin is a little more expensive, but not very much more difficult than the manufacture of acetanilid. Starting with phenol or carbolic acid and treating with HNO_3, we obtain paranitrophenol. The sodium salt can easily be made by adding to it NaOH and by heating this with C_2H_5I, paranitrophenetol is obtained. By reduction again with Fe and HCl, as in the manufacture of acetanilid, the NO_2 group, is reduced to the NH_2 group, and we have paraphenetidin. On boiling this with glacial acetic acid, the substitution takes place in exactly the same manner as in the formation of acetanilid. It may be regarded as acetanilid, in which the OC_2H_5 group replaces one H atom. It would be known then also as ethoxyacetanilid or as acetphenetidin. By developing these two antipyretics, although it may seem somewhat complex, one is able to appreciate the relationship existing between them and explain that the superiority of phenacetin is due to the entrance in the acetanilid molecule of the ethoxy group.

1. $C_6H_5OH+HNO_3=C_6H_4NO_2OH+H_2O$
Paranitrophenol
2. $C_6H_4NO_2OH+NaOH=C_6H_4NO_2ONa+H_2O$
3. $C_6H_4NO_2ONa+IC_2H_5=C_6H_4NO_2OC_2H_5+NaI$
Paranitrophenetol
4. $C_6H_4NO_2OC_2H_5+Fe+6HCl=C_6H_4NH_2OC_2H_5+Fe_2Cl_6+2H_2O$
Paraphenetidin
5. $C_6H_4NHH.OC_2H_5+HOOC.CH_3=C_6H_4.NH.OC.CH_3.OC_2H_5+H_2O$
Acetic Acid Phenacetin

Here, too, there are a large number of derivatives possible by introducing other acid radicles than acetic. Lactic acid gives lactophenin; salicylic acid produces saliphen; citric acid, citrophen; propionic acid, triphenin; mandelic acid, amygdophenin. The physiologic action of all of these compounds and a number of other derivatives of phenetidin are fundamentally the same.

The antipyretics just spoken of are coal-tar derivatives or synthetics, but of a list of over thirty synthetics which I found on the shelves of an Ann Arbor pharmacist, more than half were not derived from coal-tar products. In this list the following were from coal-tar: antipyrin, acetanilid, phenacetin, exalgin, lactophenin, nosophen, orthoform, salophen, agurin, xeroform, saccharin, salol, methylene blue, phenolphthalein. Those derived from other sources were iodoform, chloral hydrate, chloralamid, heroin, protargol, argyrol, sulphonal, trional, urotropin, betaeucain, euquinin, tannigen, tannalbin, aristol, duotal, thiosinamin, veronal, urethan.

Kopp's Baby's Friend Still at Its Deadly Work.

The newspapers of Duluth, Minn., recently chronicled the death of a child from what one paper characterized as "patent dope." We communicated with Dr. A. J. Braden of Duluth, the attending physician in the case, and he sends us the following report:

History.—On Sept. 7, 1906, I was called to attend a six-months old child. The child was vigorous and healthy when born and had always been breast-fed. When it was about two weeks old it was troubled with colic, and on the advice of a neighbor the mother administered a preparation known as Kopp's Baby's Friend. This was at first given in doses of from 5 to 8 drops and was gradually increased until at the time of my visit the child was receiving a teaspoonful at a dose. The mother informed me that she always gave at least one such dose daily and that some days she gave two. She would not admit that she ever gave more than two doses in one day, but I am convinced from my conversation with her that the child received the two doses more days than it did the one.

Examination.—When I saw the child the pupils were pinpoint in size and it had the appearance of being deeply narcotized. The child was pale and waxy in color and the body was emaciated; in fact, the infant appeared to be in the last stages of marasmus.

Remarks.—The child died September 8. As this child was healthy at birth, was breast-fed, never had diarrhea or other sickness, I believe that its death was due to chronic opium poisoning, and I so reported it in the death certificate.

I may state that within a few days after a birth is reported in Duluth, a sample bottle of Kopp's Baby's Friend finds its way to the parents, and I know of two instances in which the preparation was introduced in this way and in which it was being used daily several months afterward.

Proprietary Prostitution.

Under this head, the *California State Journal of Medicine* says:

"Some time ago THE JOURNAL of the American Medical Association published a statement to the effect that most proprietaries, no matter how exclusively they may have been presented to the medical profession at first, eventually become 'patent medicines,' in the sense that they are later advertised directly to the public and encourage self-medication. A very forcible example of just that very progress from the doctor and the medical journal to the general public and the lay publication has been furnished recently. Some few years ago Mr. Alpers, one of the leading pharmacists of New York, became interested in guaiacol preparations and derivatives and produced a substance which he called 'triacol (Alpers).' It was presented to the medical profession, and, we believe, found to have some merit. Doubtless it was sent around and a number of physicians 'sampled.' Doubtless, too, a number of hospitals received supplies of it and used it. It was advertised in some of the larger medical journals and was, apparently, a perfectly ethical preparation. But now comes the sequel. Having developed a certain market in the medical profession, and having secured a certain quasi-medical endorsement, the scheming proprietors, the Alpers Chemical Co., throw off the mantle of decency and come before the public. In the last issue of one of the lay magazines (*Ainslee's*) appears the following advertisement:

"'Physicians prescribe Triacol (Alpers). Triacol (Alpers) has been accepted by physicians as the most perfect combination of certain approved remedial agents for the treatment and cure of diseases of the organs of respiration. Coughs, bronchitis, bronchial asthma and other diseases of the respiratory organs promptly yield to the action of this scientific preparation. Triacol (Alpers) is not a "patent medicine." It is a strictly ethical preparation, extensively and successfully used in hospitals and in private medical practice. Interesting booklet sent on request, telling what triacol (Alpers) has done and is doing to cure coughs, bronchitis, etc. Thousands of physicians approve triacol and praise it. At all department stores and druggists. Price, $1, express prepaid.'

"Now, is not that nice? And Mr. Alpers stood for years as a leader in scientific pharmacy and his voice was listened to with respect in the deliberations of the American Pharmaceutical Association. Is it to laugh or to weep?"

Silver Preparations in Conjunctival Disease.

Myles Standish (*Ophthalmic Record*, August, 1906) remarks that while a positive result from laboratory tests is of value, negative laboratory results form a very poor foundation for clinical advance. He refers to the recent experiments of Dr. Derby, which are supposed to show the inefficiency of silver preparations and which illustrate the difficulties of trying to reproduce clinical conditions in the laboratory. On account of the difficulty with which the gonococcus is cultivated, the experiments were made with the *Staphylococcus aureus*. Clinical experience, however, seems to show that the bactericidal action of silver is much greater in cases of gonococcic infection than in that of staphylococcic. It is highly probable also that the condition which is omitted in the laboratory and which makes the growth of the gonococcus on ordinary media so difficult,

may be the very one which makes silver efficacious in the treatment of the disease.

The reason that ordinary clinical observation is of small scientific value is that it is impossible to control all the conditions and to keep the patient under constant supervision. Standish believes that these objections are obviated in such an isolation ward as the Gardner Building of the Massachusetts Charitable Eye and Ear Infirmary. Here the conditions surrounding the patient, he states, are absolutely under control. The cases selected for observation were cases of gonorrheal ophthalmia with clear cornea. Of 50 cases of ophthalmia neonatorum treated with silver nitrate corneal affection developed in 6 per cent. In 150 cases treated with protargol the cornea became infected in 3 per cent. In 201 cases treated with argyrol, the cornea became infected in 2 per cent. In adults the proportion of cases in which the cornea became infected was much greater, being about 42 per cent., but in only approximately 7.5 per cent. was the outcome a blind eye.

Standish's conclusions are that "the modern silver preparations are efficient in the control of gonorrheal infection of the conjunctiva, and that they have greater bactericidal properties in this disease than the laboratory experiments on other micro-organisms would lead us to expect."

Standardization of Non-official Remedies.

In the treatment of digestive disorders, due to an insufficient secretion of saliva, the administration of the starch-digesting ferment, diastase is often recommended. Besides those malt extracts, which contain active diastase, various forms or brands of diastase are offered for sale. The source of these products differs widely and we have diastase obtained from malt, diastase extracted from the pancreas of animals and diastase of fungoid origin.

Diastase is not official in the United States Pharmacopeia and no standard of quality has been established for it. It is, therefore, but natural that the different brands as found on the market will differ very much in strength.

That this is true is shown by W. H. Blome, University of Michigan (*Pharm. Rev.*, 1906, p. 260), who examined four commercial brands and found two of them practically worthless.

This examination brings out another important point, namely, that the activity of these preparations varies decidedly with the conditions of the experiments. Thus, a certain brand was capable of changing a much larger quantity of starch to *dextrin* than was another brand, but when these two brands were judged according to the amount of starch converted to *sugar* then no great difference in activity was shown.

This difference in action is not surprising when the widely different sources of the ferment is considered; it points out the need of the adoption of some standard method for the valuation of diastase preparations. As far as possible, such a method should indicate their value as an aid to digestion.

"Patent Medicines" and Artificial Foods in Australia.

According to the *Pharmaceutical Journal*, Sept. 15, 1906, the Federal House of Representatives of Australia has passed the following motion:

1. In the opinion of this house, in the interest of the health of the community of Australia, it is desirable that all "patent" or proprietary medicines, all infantile and artificial foods, all medical and surgical appliances which purport to cure or to alleviate any disease to which the human frame is subject, should be critically examined on entry into the commonwealth: (a) To ascertain their contents and composition. (b) To ascertain their value from a curative standpoint. (c) To ascertain their value as food. (d) To ascertain their value as remedial agents.
2. It is further desirable that the exact pharmaceutical composition or construction should be set out clearly on the label or package of each bottle, tin box or parcel, and that a clear definition be given of the ailment they profess to cure or alleviate.
3. In the event of the description on the bottle, tin box, package or parcel being false or misleading to the purchaser, then all such articles shall be refused admission into the commonwealth, and all such as have been landed and not cleared shall be destroyed.

The government already possesses authority to enforce these regulations, and Sir William Lyne, minister of customs, expressed a determination to stop the importation of undesirable goods.

Correspondence

Pathologists in Hospitals for the Insane.

St. Peter, Minn., Oct. 22, 1906.

To the Editor:—Laboratories in hospitals for the insane in the Middle West are not so uncommon as the editorial in The Journal, October 6, would imply. There are a number of them, and the laboratory in this hospital has been in existence since 1894. This laboratory was started as an adjunct to the clinical work of the hospital, rather than as a place to study the morbid histology of the brain, although the latter has not been neglected; and the "continued careful study of the rich material in these institutions" has shown us that they are unworked mines of clinical and pathologic wealth in general medicine, which have been overlooked and ignored, while time and attention has been given to the study of the morphology of the brain, and the histology of its cortex; as if in them was constituted the pathology of insanity, and with the implication that the brain existed and performed its functions independently of the rest of the organism.

Your readers may be surprised to hear that the opportunities for clinical and laboratory study in general medicine, are as great, and in some respects much greater than those existing in the average general hospital; and the knowledge to be gained of the processes in disease is much greater, because there are so many patients, and they live in the hospital continuously. While, because of the hospital régime, the ordering of the diet and occupation of the patient, and the control of his conduct; everything else but the condition to be studied can be eliminated, and this is particularly true in the study of the chronic degenerative processes in the vegetative organs. Furthermore, the work done in the laboratory has shown us that the true pathology of insanity is somatic, and has to do with the processes of nutrition and waste as they are affected by acute disease or degenerative change in the body organs.

If medical men generally would interest themselves in the clinical work in hospitals for the insane, and encourage bright young men to seek experience in general medicine in them, much would be done to put the study of insanity on a truly scientific basis; to separate psychiatry from metaphysics, and to eliminate the superstition and preconceived ideas concerning the insane that so seriously hamper the work of these institutions.

It is to be hoped, therefore, that the medical profession in Illinois will encourage other work in the laboratories to be established, besides the study of the morbid histology of the brain and general nervous system, and the manifestations of morbid psychology, which are, after all, results, not causes.

H. A. Tomlinson.

Warning Against Fraudulent Insurance Agent.

Fargo, N. D., Oct. 6, 1906.

To the Editor:—There is a man traveling about the country representing himself as an agent of the Columbian Life Insurance Company of Boston. He goes by the name of Bailey and other aliases; he sells stock and appoints agents. The officials of the company inform me that he has swindled a great many doctors and that they have had detectives on his trail, but have not been able to get him. He is a large man, weight 240 pounds, about 5 feet 11 inches tall, dimple in chin, gray or blue eyes, poses as a Mason and an Elk. I believe publicity in The Journal and request for other journals to copy might save a good many doctors money and might be means of apprehending this criminal. P. H. Burton, M.D.

[This case was the subject of a warning in The Journal, May 12, 1906, page 1463.]

The Necessity for Better Provision for Legal Medicine.

Philadelphia, Oct. 13, 1906.

To the Editor:—May I trespass on your space so far as to plead not guilty, or at least, *non vult*, to the indictments by some of your correspondents in The Journal, October 13, page 1208. I do not think I was sarcastic; I did not intend to be. I objected to regarding lectures by a lawyer as sufficient to constitute a course in medical jurisprudence for

medical students. I did not express a doubt, that, as far as they go, the lectures are satisfactory, but they are not likely to go far enough, and it appears that I was not astray in my view of their scope.

I am quite willing to second Dr. Cattell's encomiums of Coroner Jermon, but this improved condition is not yet a year old, and my statements had reference to the course of events in the coroner's office for nearly a generation. It would require too much space to prove it, but I feel sure that a statistical inquiry would show that the creditable features Dr. Cattell enumerates are but secondary in the general history of the office in this city. Moreover, the reform wave is probably now on its ebb.

HENRY LEFFMANN.

Marriages

CHARLES C. HARROLD, M.D., to Miss Helen Shaw, both of Macon, Ga., October 23.

JOHN A. BRUCE, M.D., Boston, to Miss Ada Bromilow Lake of Chicago, October 24.

CHARLES FISHER OSGOOD, M.D., to Miss Ella Hubenthal, both of Ogden, Utah, October 10.

WILLIAM A. MILLER, M.D., to Mrs. Amy Richardson, both of Sheridan, Wyo., recently.

EUGENE FREDERICK WARNER, M.D., to Miss Dorothy Alness, both of St. Paul, October 9.

M. A. FLATLEY, M.D., Antigo, Wis., to Miss Eugenie Shea of Ashland, Wis., October 9.

L. AUSTIN BURR, M.D., to Miss Josephine Raney, both of Bloomington, Ill., October 17.

ALBERT C. MCGEAGH, M.D., Pittsburg, to Miss Myrtle B. Price, at Pittsburg, recently.

ARTHUR M. SMITH, M.D., Los Angeles, Cal., to Miss Ellen Leona Milligan of Chicago, October 18.

SAMUEL LLOYD MCCARTHY, M.D., Altoona, Pa., to Miss Marian Miller of Media, Pa., October 6.

EDWIN M. CHAUNCEY, M.D., Girard, Mich., to Miss Myrtle Campbell, at Girard, Mich., October 10.

JAMES RUFUS LITTLETON, M.D., Augusta, Ga., to Miss Mary King Marland of Griffin, Ga., October 2.

JOHN J. SULLIVAN, JR., M.D., Scranton, Pa., to Miss Frances Mary O'Neill of Philadelphia, October 10.

HERMAN JOHN BRACKNEY, M.D., Sheldon, Iowa, to Miss Carrie May Soesbe of Greene, Iowa, October 17.

WILLIAM H. MATCHETTE, M.D., Hancock, Mich., to Miss Mabel Hambitzer of Houghton, Mich., October 10.

ERNEST LAWRENCE PARKER, M.D., Worcester, Mass., to Miss Sally Leeds Bufford of Dorchester, Boston, recently.

LEWIS S. THORPE, M.D., Los Angeles, to Miss Edith Lilliencrantz of Oakland, Cal., at her country home near Aptos, October 11.

Deaths

James Stewart, M.D. McGill University, Medical Department, Montreal, 1869; L.R.C.P. and L.R.C.S., Edinburgh, 1883; from 1883 to 1891 professor of materia medica and therapeutics, and thereafter professor of medicine and clinical medicine in McGill University, and surgeon-in-chief of the Royal Victoria Hospital; a well-known specialist on nervous diseases; honorary president of the section of medicine at the Pan-American Medical Congress, 1896, and vice-president of the St. Andrew's Society, Montreal, 1897, died at his home in Montreal, October 6, from cerebral hemorrhage, after an illness of nine days, aged 59.

George Douglas, M.D. New York University, New York City, 1845; a member of the New York State Medical Society, Chenango County (N. Y.) Medical Association; an honorary member of the Medical Society of the State of California; a member of the International Medical Congresses in 1876, 1887 and 1890; a member of the first Pan-American Medical Congress, 1893, and formerly president of the Rocky Mountain Medical Association; one of the oldest practitioners of Chenango County, died at his home in Oxford, October 10, from hemorrhage of the bladder, aged 83.

Joseph Wylie Maxwell, M.D. Kentucky School of Medicine, Louisville, 1859; a veteran of the Civil War, and thereafter a professor in the Kentucky School of Medicine and also in the Louisville College of Medicine; for several terms a member of the board of council, board of aldermen and board of school trustees of Louisville; notable as an inventor and chemist, died suddenly from cerebral hemorrhage, at his home in Louisville, October 12, aged 73.

Randell Croft Stoney, M.D. Medical College of the State of South Carolina, Charleston, 1897; a member of the American Medical Association, Medical Society of the State of California and San Francisco County Medical Society, of San Francisco; contract surgeon United States Army during the Spanish-American War, with service in the Philippine Islands, was instantly killed in a street-car accident in San Francisco, October 1.

George Wollage Pratt, M.D. Geneva (N. Y.) Medical College, 1845; for more than 50 years editor of the Corning *Daily Journal;* postmaster of Corning for one year; for seven years collector of the port of Corning, and for several terms a member of the board of managers of the St. Lawrence State Hospital, Ogdensburg, died at his home in Corning, N. Y., October 3, after a long illness, aged 85.

John F. Jenkins, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1866; a member of the American Medical Association and Michigan State Medical Society; once vice-president of the Southern Michigan Medical Society; for 34 years an esteemed and successful practitioner of Tecumseh, Mich., was found dead in his office, October 12, from heart disease, aged 72.

Adam Uriah Holladay, M.D. Memphis Hospital Medical College, Memphis, Tenn., 1900; for two years secretary of the Craighead County (Ark.) Medical Society; a member of the Tri-State Medical Society and the Tipton County (Tenn.) Medical Society, died at his home in Randolph, Tenn., September 20, from malarial hematuria, after an illness of 30 hours, aged 31.

Bonner Huxley Cavitt, M.D. Barnes Medical College, St. Louis, 1903; of Hoxie, Ark.; a member of the Arkansas State Medical Society and Lawrence County Medical Society; local surgeon for the St. Louis, Iron Mountain & Southern Railroad, died in the Missouri Pacific Hospital, St. Louis, September 20, from remittent malaria, after an illness of four weeks, aged 26.

Max Hempel, M.D. Medical Department of Washington University, St. Louis, 1901; a member of the American Medical Association and of the St. Louis Medical Society of Missouri; of wide repute as an educator and writer on scientific matters, died at Mullanphy Hospital, St. Louis, October 9, from carcinoma of the stomach, after a long illness, aged 43.

Harvey Donnel Owen, M.D. Medical Department of the University of Tennessee, Nashville, 1897; a member of the American Medical Association, the Oklahoma State Medical Association and the Pottawatamie County Medical Society, died at his home in Keokuk Falls, Okla., from remittent malarial fever, October 3, after an illness of three weeks.

William D. Sullivan, M.D. McGill University, Medical Department, Montreal, 1879; a member of the American Medical Association; of High Springs, Fla.; a surgeon of the Atlantic Coast Line, died in the Odd Fellows' Sanitarium, Gainesville, Fla., four days after an operation, from acute kidney disease, October 5, aged 54.

John M. Quick, M.D. Eclectic Medical Institute, Cincinnati, 1856; auditor of Franklin County until 1860; secretary of the local board of health of Brookville from 1890 to 1894, and physician to the Franklin County Infirmary from 1894 to 1900; the oldest practitioner of Brookville, Ind., died October 13, aged 88.

Alfred H. Robbins, M.D. University of Buffalo, Medical Department, 1850; for more than half a century a practitioner of Rochester, Ind.; representative from Fulton County in the state legislature for three terms, died at his home in Rochester, October 8, from senile debility, aged 80.

Robert L. Morrison, M.D. University of Maryland School of Medicine, Baltimore, 1896, of Parkersburg, W. Va., died at the home of his uncle in New York City, October 15, from the effects of an abscess at the base of the brain for which operation had been performed, aged 35.

John Lee Gordon, M.D. University of Maryland School of Medicine, Baltimore, 1845, died at the home of his son in Columbus, Ohio, from acute bronchitis, October 8, aged 86.

William Harvey Axtell, a practitioner of Mercer County, Pennsylvania, for 65 years; some-time coroner of Mercer County, and for 25 years school director, died at his home in Sheakleyville, September 19, from senile debility, after an illness of eight months, aged 90.

Francis Volney Cox, M.D.; some-time secretary of the Ohio Valley Medical and Surgical Society and of the Surgical Society of Ohio, died at his home in New Martinsville, W. Va., September 27, from cancer of the rectum, after an illness of four years, aged 55.

William E. Todd, M.D. Bellevue Hospital Medical College, New York City, 1878; a prominent physician of Jackson, Miss., and for many years city physician of Jackson, died at his home in Jackson, October 13, after an illness of several days, aged 49.

Merrill Gaylord Pingree, M.D. Bennett College of Eclectic Medicine and Surgery, Chicago, 1880; who had been ill for a number of years, is reported to have committed suicide, October 15, by gunshot wound of the head and gas asphyxiation, aged 60.

Theodora E. Vassault, M.D. Medical Department of the University of California, San Francisco, 1900, of San Francisco, died in the San Francisco Hospital for Women and Children, from cerebral hemorrhage, August 20.

J. R. Jones, M.D. Missouri Medical College, St. Louis, 1859; one of the earliest settlers of Neosho County, Kansas, died at his home near Chanute, from heart disease, after an illness of several years, October 13, aged 70.

Dennis Henry Carr, M.D. Tufts Medical School, Boston, 1906; of Dorchester, Boston; house surgeon at St. Vincent's Hospital, Worcester, died suddenly in that institution, October 4, from uremia, aged 30.

Cicero Berlin, M.D. Medical College of Ohio, 1863; president of the Auglaize County Medical Society; the oldest practitioner of the county, died at his home in Wapakoneta, Ohio, October 12, aged 79.

Edwin W. Eldridge, M.D. Cincinnati College of Medicine and Surgery, 1879; formerly coroner of Wabaunsee County, Kansas, and a practitioner of Kansas City, Kan., died October 7, in Alamogordo, N. M.

Eugene Van Ness, M.D. Pennsylvania Medical College, Philadelphia, 1861; a chemist of New York City, died in his laboratory from the effects of hydrocyanic acid, self-administered, October 12, aged 60.

James William Savage, M.D. New York Homeopathic Medical College and Hospital, 1861, died at his home in Bath, Maine, September 18, from diabetes, after an illness of 15 years, aged 76.

Zenas Carey, M.D. Physio-Medical Institute, Cincinnati, 1867; some-time a lecturer in the college from which he graduated, died suddenly at his home in Bangor, Iowa, October 9, aged 73.

Pietro Sganga, M.D. University of Palermo, Sicily, 1898; formerly surgeon in the Italian army, was found dead at his home in Providence, R. I., from heart disease, October 10, aged 36.

Charles E. Oatis, Jr., M.D. College of Physicians and Surgeons, Baltimore, 1879, died at his home in Hazelhurst, Miss., October 8, from nephritis, after a long illness, aged 49.

Anthony J. Weitenberger, M.D. Detroit (Mich.) College of Medicine, 1899, died at his home in Detroit, from pneumonia, October 8, after an illness of three weeks, aged 27.

Guido Katzenmayer, M.D. Bellevue Hospital Medical College, New York City, 1883, died at his home in New York City, October 13, after an illness of five weeks, aged 74.

James D. Sharp, M.D. Louisville Medical College, 1892, of Baconton, Ga., died at the home of his parents in Fort Gaines, Ga., October 3, after an illness of six months.

David J. Erwin, M.D. Fort Wayne (Ind.) College of Medicine, 1884, died suddenly at his home in Lake City, Mich., October 11, from heart disease.

Henry A. Laurent, M.D. University of Heidelberg, Germany, 1891, died at his home in New York City, October 12, from nephritis, aged 43.

Jacob F. Hifsh, M.D. Baltimore, died at La Misa, Cal., September 12, from disease of the throat, after an illness of three months, aged 26.

Franklin W. Courtney, M.D. Cincinnati College of Medicine and Surgery, 1876, died at his home in Carenero, La., October 6, aged 54.

Peter C. Meengs, M.D. Rush Medical College, Chicago, 1891, died at his home in Ukiah, Ore., from pneumonia, recently.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending October 20, 1906:

Eastman, William R., asst.-surgeon, returned to Army General Hospital, Presidio of San Francisco, from leave of absence.

Buck, Carroll D., asst. surg., reported at San Francisco, for duty at the Army General Hospital.

Maus, Louis M., deputy surgeon-general, granted hunting leave for ten days.

Pinkston, Omar D., asst.-surgeon, reported for duty as surgeon of the transport *Sherman*.

Heysinger, James D., asst.-surgeon, granted leave of absence for fourteen days.

Stedman, Chester J., asst.-surgeon, granted leave of absence for one month.

Rhoads, Thomas L., asst.-surgeon, left Fort Riley, Kans., for his station, West Point, N. Y.

Skinner, George A., asst.-surgeon, arrived at Fort Snelling, Minn., per telegraphic instructions, Headquarters, Department of Dakota.

Jones, Harold W., asst.-surgeon, arrived at Presidio of Monterey, Cal., from duty in Sequoia National Park.

Lewis, William F., asst.-surgeon, relieved from duty as attending surgeon at Chicago, and ordered to Fort Snelling, Minn., for duty.

Chidester, Walter C., asst.-surgeon, granted leave of absence until Jan. 15, 1907; resignation accepted to take effect that date.

Lyster, William J. L., asst.-surgeon, left Fort McIntosh, Texas, on leave of absence for two months, twenty-four days.

Richardson, George H., contract surgeon, ordered from Presidio of Monterey, Cal., to duty at the Depot of Recruits and Casuals, Angel Island, Cal.

Merrick, John N., contract surgeon, granted leave of absence for oue month, with permission to ask an extension of one month.

Chase, Alpha M., contract surgeon, ordered from Fort Clark, Texas, to Fort Sam Houston, Texas, for temporary duty.

Treuholtz, Clarence A., contract surgeon, returned to Army General Hospital, Fort Bayard, N. M., from temporary duty at Fort Wingate, N. M.

Marvin, Marion F., contract surgeon, left Fort Mansfield, R. I., and arrived at Fort H. G. Wright, N. Y., for temporary duty.

Richardson, William H., contract surgeon, left Fort Monroe, Va., and arrived at Camp of Supply, Newport News, Va., for duty.

Repp, John J., contract surgeon, ordered from Philadelphia, to the Army General Hospital, Washington Barracks, D. C., for duty.

Felts, Robert L., contract surgeon, left Fort Sam Houston, Texas, on leave of absence for three months.

Burkart, John L., contract surgeon, ordered from Chicago to Fort Sheridan, Ill., for duty.

Dulin, Charles T., contract surgeon, ordered from North Yakima, Wash., to Whipple Barracks, Ariz., for duty.

Garcia, Leon C., contract surgeon, ordered from St. Louis, to Fort Riley, Kan., for duty.

Jarrett, Arthur R., contract surgeon, ordered from Brooklyn to Fort Totten, N. Y., for duty.

Tyler, George T., contract surgeon, ordered from Baltimore to Fort Monroe, Va., for duty.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Oct. 20, 1906:

Pryor, J. C., surgeon, detached duty at the Marine Barracks, Washington, D. C.; to additional duty at U. S. Naval Medical School Hospital, Washington, D. C.

Field, J. G., surgeon, additional duty at Marine Barracks, Washington, D. C.

Derr, E. Z., medical director, commissioned a medical director in the United States Navy from Sept. 6, 1906.

Eagling, E., pharmacist, U. S. N., retired, died at Yokohama, Japan, September 22, 1906.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending October 17, 1906:

Eager, J. M., assistant surgeon-general, directed to proceed to Harrisburg, Pa., for special temporary duty, on completion of which to rejoin his station in Washington, D. C.

Godfrey, John, surgeon, placed on waiting orders effective Oct. 13, 1906.

Grubbs, S. B., P. A. surgeon, leave of absence granted by bureau letter of August 30, 1906, revoked.

Wille, C. W., P. A. surgeon, directed to proceed to New Orleans for special temporary duty, on completion of which to rejoin his station at Gulf Quarantine.

Houghton, M. W., acting asst.-surgeon, leave of absence granted for 15 days from Oct. 15, 1906, amended so as to be effective from October 20, 1906.

Shehan, L. B., acting asst.-surgeon, granted leave of absence for 17 days from Aug. 21, 1906.

Shehan, L. B., acting asst.-surgeon, granted leave of absence for 30 days from July 21, 1906, on account of sickness.

Walkley, W. S., acting asst.-surgeon, granted leave of absence for 5 days from Oct. 15, 1906, and excused for a further period of six days without pay from Oct. 20, 1906.

BOARD CONVENED.

A board of medical officers was to meet in Baltimore, Oct. 17, 1906, for the purpose of making a physical examination of a cadet of the Revenue Cutter Service, said board to continue in session until Oct. 23 for the purpose of examining other cadets of the Revenue Cutter Service: Detail for the board: Surgeon L. L. Williams, chairman; Asst.-Surgeon Friench Simpson, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Oct. 19, 1906:

SMALLPOX—UNITED STATES.

Georgia: Chatham County, Oct. 10, 2 cases.
Illinois: Moline, Sept. 23-30, 2 cases.
Indiana: South Bend, Sept. 29-Oct. 6, 1 case.
Missouri: St. Joseph, Oct. 2-9, 1 case.
Tennessee: Knoxville, Sept. 29-Oct. 6, 1 case.
Texas: Houston, Sept. 29-Oct. 6, 1 case (imported).
Wisconsin: Appleton, Sept. 29-Oct. 13, 3 cases.

SMALLPOX—FOREIGN.

Africa: Cape Town, Aug. 25-Sept. 1, 1 case.
Brazil: Bahia, Aug. 25-Sept. 15, 9 cases; Rio de Janeiro, Sept. 2-15, 3 cases.
Chile: Antofagasta, Aug. 14-Sept. 8, 55 cases, 15 deaths; Coquimbo, Aug. 11-31, 65 cases, 5 deaths; Iquique, Aug. 23-Sept. 8, present.
Ecuador: Guayaquil, Sept. 1-15, 19 deaths.
Great Britain: Bradford, Aug. 25-Sept. 18, 2 cases.
India: Bombay, Sept. 4-11, 1 death; Calcutta, Sept. 1-8, 1 death; Karachi, Aug. 26-Sept. 2, 4 cases; Madras, Aug. 25-Sept. 7, 3 deaths; Rangoon, Aug. 18-25, 2 deaths.
Italy: General, Sept. 21-27, 3 cases.
Nicaragua: Sept. 27-Oct. 4, 1 case.
Russia: Moscow, Sept. 8-15, 6 cases; Odessa, Sept. 8-22, 2 cases; St. Petersburg, Sept. 1-8, 1 case.
Spain: Barcelona, Sept. 20-30, 11 deaths.
Turkey: Constantinople, Sept. 8-16, 1 death.

YELLOW FEVER.

Cuba: Guines, Oct. 13, 1 case, 1 death; Havana, Oct. 10-16, 10 cases, 1 death; Santa Clara Province, Oct. 11-13, 2 cases.
Ecuador: Guayaquil, Sept. 1-15, 2 deaths.
Mexico: Merida, Sept. 23-29, 4 cases, 4 deaths; Tustepec, 1 case; Vera Cruz, 1 death.

CHOLERA—INSULAR.

Philippine Islands: Manila, Aug. 18-Sept. 1, 58 cases, 48 deaths; Provinces, 639 cases, 490 deaths.

CHOLERA—FOREIGN.

China: Fuchau, Aug. 10, present.
India: Bombay, Aug. 28-Sept. 18, 161 deaths; Calcutta, Aug. 25-Sept. 8, 15 deaths; Rangoon, Aug. 18-Sept. 8, 11 deaths.

PLAGUE.

Australia: Sydney, July 22-28, 1 case.
Brazil: Bahia, Aug. 25-Sept. 1, 1 case, 1 death; Campos, Sept. 10, 1 case; Rio de Janeiro, Sept. 2-15, 16 cases, 3 deaths.
China: Fuchau, Aug. 10-Sept. 10, present; Hongkong, Aug. 11-18, 3 cases, 2 deaths.
India: General, Aug. 25-Sept. 1, 3,503 cases, 2,523 deaths; Bombay, Aug. 28-Sept. 18, 82 deaths; Calcutta, Aug. 25-Sept. 8, 19 deaths; Karachi, Aug. 26-Sept. 2, 6 cases, 4 deaths; Rangoon, Aug. 18-Sept. 8, 188 deaths.
Japan: Formosa, Aug. 21-31, 1 case, 4 deaths.
Peru: Lima, Sept. 1-12, 4 cases; Paita, Sept. 1-8, 1 case, 1 death.

Society Proceedings

COMING MEETINGS.

Mississippi Valley Medical Association, Hot Springs, Ark., Nov. 7-8.
American Public Health Assn., Mexico City, Dec. 3-7.
Southern Surg. and Gyn. Assn., Baltimore, Dec. 11-13.

ST. LOUIS MEDICAL SOCIETY.

Regular Meeting, held Oct. 6, 1906.

SYMPOSIUM ON THE INDICATIONS FOR THE INTERRUPTION OF PREGNANCY.

Diseases of the Kidneys.

DR. HENRY SCHWARZ called attention to the different significance of induced pregnancy according to the period of pregnancy and according to the purpose for which it is undertaken. He said we should speak of induced labor when the interruption is attempted near term, and induced abortion and miscarriage when attempted in the early days of pregnancy. Premature labor is attempted either in the interest of the mother or of the child. If it is attempted in the interest of the fetus one must be sure that the fetus is viable. In this case pregnancy must be beyond the thirty-second week and the child must show signs of life. Under favorable conditions a fetus of twenty-four weeks' gestation may continue to live, but the majority of children born near the twenty-eighth week die. Whenever it is desired to induce premature labor in the interest of the child, the pregnancy must be up to the thirty-second week. When it is desired to interrupt pregnancy in the interest of the mother, it is a different matter. After the thirty-second week it should be remembered that there is a good chance of saving the child by the use of incubators and milk specially prepared. There is no satisfaction or glory in the performance of miscarriage for the sake of saving the mother's life. By Cesarean section the mother and child can sometimes be saved. It is only when two or more reputable physicians are of the opinion that a woman is in danger of dying that there is justification in the performance of a miscarriage. No individual physician should attempt to decide it alone.

The speaker said that in twenty-seven years' practice of special kind (obstetrics), only diseases of the kidneys called for the interruption of pregnancy near term. Distinction must be made between kidney diseases that have existed before pregnancy occurred and kidney disorders arising during the term of pregnancy. Chronic kidney diseases call for no interruption of pregnancy during pregnancy. In cases of chronic nephritis the destruction of kidney tissue is more rapid during pregnancy and in most cases of albuminuric retinitis detachment of the retina and atrophy of the optic nerve have led to blindness. While kidney disease of a chronic nature does not call for an interruption of pregnancy, once it has occurred it certainly justifies the physician in warning the patient against pregnancy and teaching her how to prevent conception.

As to kidney diseases arising during pregnancy, the fetus is in as much danger as the mother. It is then a question of rapidly removing the contents of the uterus to save the mother as well as the child. When death approaches a mother the fetus is in great danger of asphyxiation during the agonal stage.

Tuberculosis.

DR. L. M. WARFIELD said that recognized authorities hold and urge opposite views on this subject. The importance of the subject can be seen when a consideration is given to the number of pregnant women who have tuberculosis. Bacon claims that 1 per cent. of pregnant women have tuberculosis. All authorities agree that when pregnant women have tuberculosis abortion should be attempted during the early stages of pregnancy, as this condition leads to thickening of the vocal cords and eventual death by asphyxia. Unless tuberculosis is recognized before the end of the third month, intervention is useless. Freund states that in his experience with tuberculous pregnant women, spontaneous abortion is frequent. Some claim that 24 per cent. of children from tuberculous mothers are born dead.

While tuberculosis of the lungs is apt to show during pregnancy, and while it may become worse after delivery, still this is not always true. Tuberculosis of the lungs, in itself, is not an indication for the interruption of pregnancy. Freund, in 4,000 cases of pregnancy, saw 26 cases of tuberculosis of the lungs. All had normal labors and no bad results. He saw 21 severe cases, 7 of which aborted. Five died after abortion. In advanced cases the child should receive the benefit of the doubt; in mild cases the mother.

The internist and the obstetrician should work hand in hand on this question. The examination of the lungs in pregnant women is of as much importance as the measurement of the pelvis; in fact, more so. Particular attention should be paid to the convalescence of pregnant women from colds, grippe, etc. The diagnosis of malaria should not be accepted in such cases.

The speaker advised that no tuberculous mother should nurse her child. He concluded by summarizing as follows: Tuberculosis of the larynx is the greatest danger in pregnant states. In advanced cases of tuberculosis of the lungs in pregnant women, there should be no interruption of pregnancy. In early tuberculosis of the lungs, with loss of weight, interruption of pregnancy is perhaps feasible. There is only one rule: If abortion is to be performed, it should be done early.

Diseases of the Heart.

DR. W. H. VOGT said that abortion is indicated when there is absolute danger to the life of the pregnant woman. He called attention to the fact that sometimes patients attempt to deceive their physicians by magnifying symptoms so as to make them practice an abortion. The question of danger to the pregnant woman from heart disease has been exaggerated. The prognosis is usually better than is commonly thought. Vignet claims that 13 per cent. of pregnant women with cardiac disease suffer during pregnancy, while Poroc claims as as many as 65 per cent. Yet many women with cardiac disease go through pregnancy and labor without trouble. In some cases the cardiac disease is overlooked and the patient has her normal labor without any disturbance. Among the various heart lesions mitral stenosis is considered to be the most dangerous. Lusk claims that beyond the sixth month this complication will prove absolutely fatal. Others claim that some patients recover. Aortic insufficiency comes next, then mitral insufficiency. Jackson reports 13 cases of pregnant women with all the various kinds of cardiac lesions and with all the complications. Of these, all but 2 patients went to normal term and labor. Of all these patients only one died. It has been claimed that spontaneous abortion always occurs in uncompensating lesions of the heart. This has been denied. The fact seems to be that if a woman has an uncompensating heart lesion she will not go through pregnancy normally, but if the lesion is compensating she will do so.

If a pregnant woman is found with a heart lesion she should be controlled carefully. She should not be informed of her heart trouble. Even if disturbances of compensation occur, the fetus may be carried to full term. Patients should be warned not to work, nor to exert themselves climbing stairs. Mild exercise may be practiced. If symptoms arise indicating disturbance in compensation, put the patient to bed, apply ice bags to the region of the heart, use liquid diet, digitalis and strophanthus. If, with all these measures, compensation is not established, then the question of the interruption of pregnancy can be considered. The dangerous symptoms are of least gravity during pregnancy, graver during labor and gravest during the puerperium. Labor must not be induced too hastily, because after induced labor the sudden drop in blood pressure may kill the patient. On the other hand, one should not wait too long. Dr. Vogt stated that if during the course of pregnancy disturbances of compensation occur that resist amelioration by proper treatment, there is then justification in inducing premature labor. It occasionally happens that there is a history of great trouble in these cardiac disease patients in previous pregnancies, in which cases, with consultation, the question of inducing labor should be considered, yet even in such cases care should be taken because it does not always follow that trouble in one pregnancy will be followed by trouble in the next.

As to the question of prohibition of marriage of women who have heart disease, it may be said that if a patient is able to attend to her social duties, is able to be about, marriage should not be prohibited.

Hyperemesis.

DR. B. W. MOORE said that hyperemesis is more common in France and America than in Germany, and more common in the well to do than among the poorer classes. There is a great variation in its frequency and in its gravity. Frank says that he has never seen a case of hyperemesis in which abortion is indicated. Yet in France, 180 cases were collected, with a mortality of 72. For the purpose of the present discussion, it was assumed that hyperemesis is fatal unless a therapeutic abortion is practiced. This complication may be divided into three classes: (1) Reflex or neurotic vomiting; (2) toxic; (3) uremic. Abnormalities of the genital tract have been said to be the cause of reflex vomiting, such as ovarian cysts, hydatiform mole, twin pregnancies, etc., yet they do not exist in all cases. The fact that treatment of these abnormalities has been followed by relief of the vomiting has also been used to explain the vomiting, yet the fact that the vomiting ceases after using irrational drugs offsets this argument. It has been said by Kaltenbach that it is a true functional neurosis, a condition comparable to hysteria. He claims that it should be treated like hysteria and that therapeutic abortion is never indicated. He says that by proper treatment, rest, isolation, quiet, this form should never result fatally. It should be borne in mind where pregnancy is unwelcome that this form of vomiting occurs. There are cases of vomiting at will practiced to induce the physician to perform an unnecessary abortion.

As for toxic vomiting, Williams of Johns Hopkins collected postmortem findings in 12 fatal cases in which lesions were found in the liver, resembling those of acute yellow atrophy. The origin of the toxic material that produces these lesions has been actively sought. Vogt claims that these toxic conditions are related to eclampsia. Differentiation from other forms of vomiting is not possible. The ordinary chemical examination of the urine may be negative. Yet in the terminal stages the skin may become icteric. Death occurs with coma. The urine at this stage shows blood, albumin and casts. In acute yellow atrophy of the liver the urea is decreased and the ammonia is increased. To Williams of Johns Hopkins is due the credit for pointing to an analogous condition of the urine in cases of toxic vomiting. These changes in the urine occur before the symptoms actually occur. In reflex vomiting, there is not such change in the urine.

DISCUSSION.

DR. F. J. TAUSSIG said that it is the duty of the obstetrician to inform the general practitioner when to perform abortion and when not to do so. The following rules should be observed: The special conditions which call for an interruption of pregnancy should be defined; the pregnancy should be interrupted only when the physician has consulted one or more physicians and their approval has been obtained; the consultant should be some person of note in the community, for the dangerous practice of one unscrupulous practitioner calling another unscrupulous practitioner into consultation is not to be overlooked. The speaker said that inasmuch as the community and municipality is the loser by the performance of therapeutic abortion, an advisory board of three persons should be appointed to act as a means of protecting the community.

DR. B. M. HYPES called attention to the fact that in all cases of pregnancy the physician's duty requires him to watch and examine his patient from the time he is employed shortly after conception until he delivers the woman. He should remember that the pregnant woman is a patient from the time she is impregnated until she has delivered her child and is well. He said that he has attended many women with heart disease of long standing and has yet to see a case in which therapeutic abortion was necessary.

DR. GEORGE GELLHORN said that the authors emphasized the point that while indications for therapeutic abortion exist in many cases apparently, yet induced labor is not often necessary. He called attention to another group of indications for the interruption of pregnancy which arise from pathologic conditions within the uterus or genital sphere. Tumors must be mentioned in this connection. It is now recognized that ovarian tumors call for their removal, but never for the interruption of pregnancy. Fibroids rarely interfere with the completion of pregnancy and hardly ever furnish an indication for therapeutic abortion. The condition is different with cancer. In a case of pregnancy complicated by a cancer, differentiation must be made between pregnancy in the first or second half, secondly, between operable and inoperable cancer. In cases of pregnancy complicated by cancer, interruption of pregnancy must be proceeded with at once and the growth removed, that is, in the first half of pregnancy period. In the second half of the pregnant period, if the cancer is operable, the chances for the mother and for the child should be weighed, and in the majority of the cases the woman should be allowed to go to full term and delivery be executed then by a Cesarean section, leaving the mother to her fate. The same holds true of inoperable cancer. Retroflexion of the uterus, he said, also has a bearing on this question. These

cases are frequent. Yet in the majority of cases the retroflexed uterus will correct its position and rise in the abdominal cavity. In other cases the retroflexion will result in spontaneous miscarriage. In only the small majority of cases will the pregnant uterus remain in its normal position; in such cases the uterus should be at once replaced. In most cases this replacement is successful, but in those cases of failure there is a most dangerous condition to deal with, one which calls for an urgent indication of therapeutic abortion.

CALIFORNIA ACADEMY OF MEDICINE.

Regular Meeting, held Sept. 26, 1906.

DR. G. H. EVANS in the Chair.

Action of Amyl Nitrite Inhalations on the Blood Pressures.

DR. A. W. HEWLETT reported a series of observations on the action of amyl nitrite inhalations on man. The systolic and diastolic pressures were determined by the Erlanger instrument. The usual action on the systolic pressure in young healthy adults is a primary fall within the first minute of 10 to 15 mm. of mercury (exceptionally to 40 mm.), and a secondary rise above normal during the second and third minutes of an equal or somewhat greater amount. The diastolic pressure falls with the primary fall of systolic pressure and then gradually rises to the normal. The pulse pressure, or difference between the two, falls very slightly during the primary fall of systolic pressure and rises very considerably during the secondary rise, sometimes in the latter instance becoming twice the normal pulse pressure for the individual. The changes in pulse pressure depend for the most part on the amount of blood expelled from the heart at each systole. At the time of the great increase of pulse pressure during the second and third minutes, the excursions of the left ventricle, as seen during an *x*-ray screen examination, could be seen to be much greater than before the inhalation. The pulse rate was greatly accelerated during the first minute, after which it returned to normal. The total amount of blood expelled from the heart was increased throughout the action of the amyl nitrite, in the early stages on account of the more rapid heart action, and during the later stages on account of the increased amount of blood expelled at each systole. In some cases no fall of pressure occurred, only the secondary rise. Amyl nitrite, therefore, both dilates the peripheral blood vessels and increases the output from the heart. The blood pressure depends on the relation that exists between these two factors. Ordinary therapeutic inhalations do not necessarily lower the blood pressure, but they practically always increase the flow of blood. A few experiments with large doses of nitroglycerin showed that this drug frequently fails to lower the blood pressure even when it produces marked headache and throbbing in the vessels. Possibly in such cases it also dilates the blood vessels and increases the output from the heart.

DR. H. M. SHERMAN stated that Crile found that nitroglycerin lowers the blood pressure of animals in surgical shock, and that its use is therefore contraindicated in this condition. Crile showed that it is very difficult to raise the pressure in a system of elastic tubes by increasing the output from the pump that is supplying these tubes with fluid. This fact leads him to question the correctness of Dr. Hewlett's explanation of the action of amyl nitrite.

DR. W. W. KERR stated that the dose of nitroglycerin varied greatly for different individuals. The largest amount that he has given without producing trouble was 18 minims of the 1 per cent. solution every four hours. These variations may be accounted for by supposing that it dilates the arteries leading to the brain to different degrees in different individuals. The circulatory apparatus can not well be compared to a pump on account of the many nervous adjustments that regulate it.

DR. HEWLETT stated that experiments have shown that the nitrites lower the blood pressure of animals, while on man other investigators besides himself have found more of a rise than a fall. Possibly the different results of animal experiments are due to differences in the dose employed. Therapeutic doses, pushed to their limit, were used in these observations. Possibly toxic doses would have lowered the blood pressure. The blood pressure is no indication of the amount of blood delivered by the left ventricle into the aorta, for it may be influenced equally well by changes in the contraction of vessels at the periphery.

BRITISH MEDICAL ASSOCIATION.

Seventy-fourth Annual Meeting, held in Toronto, Ontario, Aug. 21-25, 1906.

(*Concluded from page 1322.*)

Treatment of Typhoid Fever.

F. J. SMITH, M.D., London, condemned the milk diet in typhoid fever and favored the use of solids, provided they have no seeds or other small substances likely to cause trouble. He also favored giving a patient food when he wants it and not when he does not want it, and said he had had good results from these methods. In his experience the period of convalescence had been lessened by at least 10 days by this means. The hard seeds of fruit, such as lemons, oranges, grapes, figs, etc., should be kept out of the stomach of the patient, or where fruit of this kind is given it should be given in liquid form, strained through a cloth sufficiently fine to prevent any of the seeds or solid matter going through.

SIR THOMAS BARLOW, M.D., London, the president, supported Dr. Smith's contention, but believed that care should be taken not to give the patient so much solid food that it would become a mechanical menace to the well-being of the patient.

THE JOURNAL has already referred editorially to this discussion on typhoid.

Rheumatism in Children.

DR. A. D. BLACKADER, Montreal, believed that acute rheumatism is an infectious disease, which has no geographical bounds, but presents itself under varied manifestations. He compared the characteristics seen in America with those met in England. He then considered the frequency of rheumatic arthritis, the importance of muscular pain, the association of tonsillitis with rheumatic infections and its significance, the fibrous nodules and the infrequency of their appearance in America. In conclusion he dwelt on the frequency and importance of affections of the heart in childhood, with special reference to rheumatism, and the prophylaxis and general treatment of the condition.

Acute Intestinal Diseases of Children.

DR. CHARLES G. KERLEY, New York City, in his paper, "Prevention of the Acute Intestinal Diseases of Infants During the Summer Time," stated that the most important factor in treating such diseases consists in their prevention, which may be readily brought about by proper feeding methods. In improper feeding, which causes intestinal disorder and derangement of digestion, lies the foundation of summer diseases. Unclean food he believes to be the root of the evil. Faulty feeding methods do their part and an absence of appreciation on the part of physicians and laymen that an attack of acute indigestion in summer is dangerous and needs proper treatment, also plays a part. Few cases of intestinal disease are severe at the outset, and if the minor symptoms which are first noticeable are properly treated, the result is seldom serious. If, however, the disease is allowed to develop, severe and fatal results may be the penalty. He advises that with the first sign of gastrointestinal derangement in infants, milk should be discontinued at once, and that nothing but water should be given the baby until the doctor has arrived. Frequently, for a day or two after this, the diet should be of barley water or rice water as a substitute for milk. In large municipalities the solution of the death rate among infants has been the establishment of milk depots where clean, pure, wholesome milk may be obtained at cost, or even gratis. Mothers in tenement houses should be advised by trained nurses in the care of children. The author related an experiment made last year in which 50 tenement children were placed under the care of a physician, who visited his patients every day and saw that they were fed on safe milk, with the result that not one of these infants, ranging from three to

nine months old, died during the summer period. He concurred thoroughly in the advice of Dr. Charles A. Hodgetts, Toronto, as regards the advisability of establishing milk depots and the general control of the milk trade by the municipality. The farmer should receive a good price if he supplies proper milk, and if his service is satisfactory his remuneration should be commensurate with the service rendered.

Forms of Arteriosclerosis.

DR. OSKAR KLOTZ, Montreal, contributed a paper to the discussion on the forms of arteriosclerosis, their classification and the experimental production. Experimental arterial lesions produced in animals are either degenerative, affecting mainly the media, or regenerative, in which the intima proliferates, when little or no degeneration is seen. The substances used to produce degenerative changes belong to the class of high-pressure drugs, but high pressure in itself does not lead to the medial lesions. There is a direct degenerative action of the drugs on the muscle fibers of the media and later of elastic fibers, but when the latter once give way aneurismal dilatation follows, the degeneration being of a fatty nature. Intimal regeneration is consequent to bacterial toxins, the proliferation being confined to the endothelial layer and the subendothelial cells. Where only intimal lesions are present aneurisms are not formed. The character of these experimental lesions can be compared to those in man to a certain extent. Here lesions entirely degenerative are met with in the Moenckeberg type of peripheral arteriosclerosis, and with the form of this disease found in the aorta, both of which processes are confined to the media. The experimental bacterial lesions of vessels simulate chronic endarteritis deformans.

Cancer.

DR. G. H. A. CLOWES, Buffalo, N. Y., told of the investigations conducted at the Gratwick Laboratory for Cancer Research, Buffalo. As a result of these investigations, it was believed that cancer might be due to some infectious agency. Experiments had been made on mice and the disease had been found to be transmitted from one animal to another. He detailed the conditions under which mice might be rendered immune. While he did not yet feel justified in applying this treatment to human beings, he could not tell to what further research in this direction might lead.

DR. E. F. BASHFORD, London, England, stated that so far as investigations under the Imperial Cancer Research Fund, of which he is director, indicated, cancer is not increasing in the United Kingdom. He held out no hope for the discovery of any cure for the malignant parasite in the near future. He believed cancer was the result of old age, that is, that it attacked individuals in the latter third of life and was not infectious.

DR. H. RUSSELL GAYLORD, Buffalo, cited an instance in which certain rats developed cancer after having been kept in a cage in which certain other rats suffering from cancer had been confined, and stated that this was not an isolated instance.

Sleeping Sickness.

DR. FREDERICK W. MOTT, London, England, stated that the sleeping sickness, trypanosomiasis, was spreading along the lines of commercial communication in Africa, that it had reached China and that it now affected white people as well as natives, was generally carried by the bite of a fly from an infected person to a healthy individual, and that no cure had been found for the disease.

KENTUCKY STATE MEDICAL ASSOCIATION.

Fifty-sixth Annual Meeting, held at Owensboro, Oct. 10-12, 1906.

(*Continued from page 1308.*)

Resolutions Adopted.

The following resolutions were adopted:

PUBLIC POLICY AND ADVERTISING.

Resolved, That the Committee on Public Policy and Legislation shall also act as the Press Committee, with the authority and duty of conferring with a like committee of the State Press Association in regard to advertising and all matters of mutual interest to the medical profession and the public press.

INSPECTION OF PUBLIC SCHOOL CHILDREN.

WHEREAS, It is a well known fact that the spread of contagious and infectious diseases is largely increased on the opening of public schools, many preventable diseases becoming epidemic and being carried by the pupils who are permitted to attend without proper medical examination; be it therefore,

Resolved, That the Committee on Public Policy and Legislation be instructed to have a bill drawn up and presented to the next General Assembly of the State of Kentucky compelling cities of the third and fourth class to appoint a competent medical man as medical inspector of schools.

EXPERT TESTIMONY.

WHEREAS, Medical expert testimony, as at present developed before a judicial tribunal in Kentucky, is misleading to the jury and unsatisfactory in its results, and we believe the interests of litigants would be best served by having the medical evidence weighed by a jury of experts; therefore be it

Resolved, That we urge the legislature of the State of Kentucky at its next regular session to pass a measure which will establish a method by which expert testimony may be embodied in charge of a judge, the purpose being to take the consideration of expert medical testimony out of the hands of the jury.

INQUISITION OF LUNACY.

Resolved, That we condemn the present methods of inquisition of lunacy and believe that the determination of sanity should be made by a commission of qualified medical men.

PRIVILEGED COMMUNICATIONS.

Resolved, That we urge on the Kentucky State Medical Association the importance of the act introduced in the last legislature protecting professional communication from patient to physician from forced disclosure on the witness stand and urge every member of the profession to explain the purpose of the act to his local representative in the legislature.

The Insurance Fee Question.

The following report of the committee on life-insurance examinations (Drs. J. W. Ellis, Masonville; D. C. Bowen, Elizabethtown, and T. J. Shoemaker, Morganfield), was unanimously adopted and the secretary was instructed to send a copy to every doctor and newspaper in Kentucky:

Your committee on insurance has carefully considered the subject of medical examinations and the reduction of fees, proposed by certain of the old line companies, and submits as its report the following preamble and resolutions:

WHEREAS, The recent official investigations of the three great life insurance companies of New York clearly developed that the medical departments were among the few which were not honeycombed with mismanagement or corruption; and,

WHEREAS, The legislation resulting from the investigation intended to cure evils existing elsewhere was at once seized on as a justification for a long premeditated, concerted and systematic plan for debauching these departments by lowering the standards and compensation for medical examiners, employing and importing into every section recent graduates and men who have failed in practice, as well as representatives from the lowest grades in the profession, thus destroying what has always been recognized as a fundamental safeguard in sound life insurance; and,

WHEREAS, While nothing could justify such a short-sighted course, the official reports of the income and expenses of the insurance business in this state and the country at large, last year, and during all of its history, and the facts in regard to the recent legislation in New York make ridiculous the plea that the action was necessary in the interest of economy or was caused by such legislation. Now, therefore, be it

Resolved, By the Kentucky State Medical Association, in annual convention assembled, That this organized and concerted attempt to lower the standard and compensation of medical examiners all over this country is not only most unjust and degrading to our profession, but is so unsound as a business proposition that it can not but ultimately prove most expensive and dangerous to all policyholders in these companies, made up of our patrons and ourselves;

Resolved, That a large experience having demonstrated that the thorough and painstaking examination of every applicant for insurance can not be made for less than five dollars, we recommend that this amount be fixed as the minimum fee, and shall be morally binding on all members in this state on and after January 1, 1907;

Resolved, That in view of the vast interests involved we urge the profession in every county in this state to meet at the earliest practicable day and arrange for organized resistance to this organized and inexcusable oppression. We advise that this be done outside of the society, and that, so far as possible, it include every reputable physician in the county, whether a member of the society or not. We advise that the agreement be not made a test of membership, our reliance being on the justice of our cause, a spirit of mutual helpfulness and coöperation, and our evident duty to protect the best interests of policyholders;

Resolved, That we pledge our cordial support to those companies which have so managed their affairs that they have never been tainted with charges of corruption, and consequently have not found it necessary to degrade their medical subordinates, or otherwise destroy the protection of policyholders, and our secretary is hereby instructed to publish a list of such companies in each issue of the journal, on condition that they are approved by our active and fearless state commissioner of insurance.

Resolved, That we also pledge our support to the International Policy Holders' Association in every effort it may make for the protection of the interests of policyholders; that our secretary is hereby instructed to furnish each county society in Kentucky with an ample supply of ballots for the tickets supported by this association for trustees of each of such companies, and that we appeal to the profession in each county and state in the United States to coöperate with us in this movement.

Resolutions were adopted pledging the members of the Association not to make any insurance examinations for less than $5.00. The following resolution was also adopted:

Resolved, That this association, representing the medical profession in every county in Kentucky, pledges its cordial and continuous support to Hon. Henry W. Prewitt, state commissioner of insurance, in the manly, active and systematic warfare he is making to protect the interest of policy holders against a great, far reaching danger, and we urge the profession in every county to co-operate with him in this work in every possible way.

Increased County Representation.

Chapter IV, Section 2, was amended to read as follows:

Each component county society shall be entitled to send to the House of Delegates each year one delegate for every 25 members or major fraction thereof, but each component society which has made its annual report and paid its assessment as provided in the constitution and by-laws, shall be entitled to one delegate.

The Kentucky Profession.

Dr. C. Z. Aud, Cecilia, in the president's address, spoke of his visits throughout the state in the interest of the association and dwelt with special pride on the class of men he found practicing medicine in the mountains of Kentucky. He declared in favor of patronizing local medical schools, but that it would be better to have fewer and higher grade schools. He emphasized the injustice of life insurance companies trying to cut down fees in cases of medical examination, and urged the physicians to stand firm for just fees because the companies depend almost solely on the physician to protect their interests and they should not be miserly in paying for such protection.

Technic of the Diagnostician.

Dr. Wm. A. Jenkins, Louisville, delivered the Oration in Medicine. He stated that a man to be a good physician should be an expert diagnostician. He should have a perfected technic, a good constitution and accurate powers of observation. He must know anatomy and physiology. He must be thorough, exact and exhaustive. To his book knowledge there should be added common sense. It is important always to do the same thing in the same way so that a mistake is impossible.

Drainage.

Dr. W. O. Bullock, Lexington, delivered the Oration in Surgery. He said that drainage is indicated in suppurative conditions wherever they may be reached; after extensive operations in clean cases to relieve pressure within the chest and abdomen; in operations on the thyroid gland and in certain diseases that can not be extirpated satisfactorily. The disadvantages of drainage, especially abdominal, were said to be increased discomfort, prolonged convalescence, liability to hernia; liability to obstruction from pressure or adhesions; danger of reinfection through the drain and the limited efficiency of the drain. Modern surgery, he said, is striving to minimize the necessity of drainage.

Early Diagnosis and Treatment of Pulmonary Tuberculosis.

Dr. W. F. Boggess, Louisville, thought that the difficulty of making an early diagnosis of pulmonary tuberculosis is often overestimated, and that in the south the early symptoms of the disease are often confused with malaria and treated accordingly. He urged making it a routine practice to examine the lungs of anemic girls who complain of having stomach trouble. Environment, not heredity, often assists in making a diagnosis. He insisted on the necessity of getting absolute control and the coöperation of the patient in order to treat him successfully. He endorsed the value of sanatorium treatment in the case of those individuals who can afford it, but expressed the belief that the climate of Kentucky is just as suited for the treatment of pulmonary tuberculosis as is any other climate, a statement to which those who discussed this paper did not agree. At home there should be plenty of fresh air, day and night, and food rich in albuminoids should be given, especially milk and eggs. Drugs, he said, should be avoided as much as possible, except to meet specific indications.

Tuberculosis of Peritoneum.

Dr. Lewis S. McMurtry, Louisville, reviewed the clinical history of this affection, and stated that it is fully twice as common in women as in men, the infection in women probably making its way into the peritoneum through the Fallopian tubes. He reported a case which illustrated the difficulty of diagnosis, the symptoms simulating those of an inflammatory affection of the pelvis and of dermoid cyst of the ovary. The patient died six months after the operation with pulmonary involvement. There had not been any fluid in this case, only a matting together of the intestines with the formation of extensive adhesions. In another case there was a considerable effusion, the case presenting all the physical signs of an ovarian cyst. Opening the abdomen and evacuating the fluid resulted in a permanent cure. He said that in general tuberculosis of the peritoneum the operation should not be performed, except to treat complications, such as obstruction of the intestine. In the ulcerative form of the disease operation always is contraindicated.

Dr. Joseph Walsh, Philadelphia, called attention to the fact that in postmortem examinations he has often found the appendix to be the seat of tuberculosis, and he expressed the belief that the appendix may be the starting point of a tuberculosis of the peritoneum, an opinion in which Dr. McMurtry concurred.

Gonorrhea Up to Date.

Dr. J. T. Windell, Louisville, stated that nitrate of silver, used carefully, is the ideal agent in the treatment of all cases of gonorrhea, and that the hydrostatic irrigation method of Janet has no equal.

DISCUSSION.

Dr. W. W. Anderson, Newport, protested against the term gonorrheal rheumatism used by the author, and stated that it should be referred to as being a gonorrheal arthritis because it is not rheumatism. He also urged that steps be taken to teach the laity of the seriousness of an attack of gonorrhea and to educate them not to resort to "patent medicines" and proprietaries under the mistaken impression that they can cure themselves.

Dr. William Bailey, Louisville, thought that a higher estimate of mortality would do much to prevent gonorrhea, and that the law ought to impose a penalty on any man who spreads this disease. Physicians, he said, should impress on the laity that this is one of the worst infectious diseases known to medicine and not a mere cold or something that can be cured in a few days or even a few weeks.

Dr. R. B. Gilbert, Louisville, called attention to the prevalence of gonorrheal ophthalmia. It is his routine practice to have the woman take strong antiseptic vaginal douches twice daily before labor so as to keep the genital tract as clean as possible. He said what is believed to be an ordinary leucorrhea is often really a gonorrhea, and no chances should be taken in these cases.

Dr. J. W. O'Connor, Louisville said that all laws looking toward the stamping out of gonorrhea by restriction are worthless. Good results can be obtained only by educating the laity by means of public lectures and pamphlets, as is done in Germany.

Dr. J. M. Ray, Louisville, urged the profession to do all in its power to aid in the passage of suitable laws to stamp out gonorrhea inasmuch as 33 1/3 per cent. of blind children in public institutions are blind because of an attack of gonorrheal ophthalmia. He said that given a case of gonorrheal ophthalmia in a full grown nine months baby, with proper treatment the change for recovery is very favorable, but in the case of a prematurely born baby he has never seen one recover from the disease.

Dr. J. G. Carpenter, Stanford, urged that the subject of gonorrhea ought to be quarantined until he has recovered completely. At the wind-up he should be sounded, and he should not be dismissed as cured until his urethra is of normal caliber. He should not be permitted to marry until a year afterward. He suggested that every man who has gonorrhea be branded in some way, such as wearing a red emblem, remarking that then the disease soon would be stamped out.

Dr. J. M. Mathews, Louisville, urged the education of the laity in everything pertaining to gonorrhea, pointing out to them the conditions that are caused by this disease, the lives

that are wrecked. He urged that the ministers talk about it to their congregations; that the press write about it; physicians should talk and write about it. He suggested that the governor of every state appoint a commission of five physicians, one of them to be a genitourinary specialist, whose duty it shall be to examine every man who wishes to marry and to issue a certificate permitting such marriage if he is in good health and free from gonorrhea.

Surgical Treatment of Bladder and Urethra.

DR. ARCH. DIXON, Henderson, considered lithotrity the best procedure in cases of stone in the bladder of the female. The vesicovaginal incision for large stones, he thinks, has nothing to recommend it. He urged the necessity of early operation in every case of traumatic rupture of the urethra, not excepting even those cases in which catheterization is possible and in which the rupture is only interstitial. An early resort to external urethrotomy will greatly hasten the number of cases of contracted urethras or so-called traumatic strictures.

Using Elasticity of Lung Tissue in Treatment of Injuries of Thorax and Its Contents.

DR. E. W. FORD, Hartford, reported the case of a man who had been shot through the lung, an abscess developing later. Thinking that the pus was in the pleural cavity, Dr. Ford proceeded to drain, but without achieving the desired result. He put in a rubber tube, which served as an inlet for air. The following day the symptoms had abated in severity and pus was flowing freely from the mouth of the patient, but none from the sinus, the air pressure on the inside of the lung being equalized by that on the pleural surface, so that the pus was forced through the trachea barely allowing room for respiration in the right lung.

Cystoscopy and Ureteral Catheterization.

DR. CARL LEWIS WHEELER, Lexington, reviewed the history of the invention of the cystoscope and the technic of its employment, and showed that the ureteral catheter is valuable not only as a means of diagnosis but also for the treatment of urethritis and pyelitis, for dilating the ureter in cases of stricture; for injecting oil to facilitate the passage of a stone, and to promote the healing of a ureteral fistula. By the aid of the cystoscope, he said, it is possible to ascertain the true condition of the bladder and to get the separate urine from each ureter, and of performing lavage of the renal pelvis, which is the only effective treatment of uretero-pyelitis, barring the catarrhal type, and of beginning nephritis due to extension of inflammation from the renal pelvis.

Adynamic Ileus.

DR. FRED L. KOONTZ, Louisville, suggested that inasmuch as the words dynamic and ileus are opposed in meaning it would be better to adopt the term adynamic, reserving the term dynamic for spasm of the intestinal muscle. He said that the treatment, to be of any avail, must be resorted to early. Enterostomy should be done only when the ileus is due to mechanical causes and when the condition of the patient will not permit of the adoption of other measures. While this procedure will save life, he does not recommend it to the exclusion of other measures.

Surgery of Pancreas.

DR. JOHN R. WATHEN, Louisville, is of the opinion that the disease of the pancreas is far more frequent than is generally supposed. He agrees with M. H. Richardson that surgery of the pancreas is encouraging, even in the most progressive lesions, and that it is a field which encourages abundant research. As the result of careful examination made on the cadaver, he found that the anatomy of the pancreas, as usually taught, is incorrect.

Primary Sarcoma of Spleen.

DR. G. A. HENDON, Louisville, said that only 35 cases of primary sarcoma of the spleen have been recorded since 1850. The tumor is always circumscribed and does not disseminate until very late in the course of the disease. The prognosis at the operation is always good, even in its late stages. All the abdominal fistula may be involved in malignant disease, except the spleen, which is the last of the abdominal fistula to become involved in the malignant process. Of 18 patients operated on, 13 made a good recovery; only 3 had a recurrence; 4 died from extensive metastasis, rendering the operation purely exploratory, therefore, only one death can be charged to the operation. Dr. Hendon reported one case and exhibited the specimen. The patient is in good health.

Cysts of Pancreas.

DR. T. S. LEWIS, Lexington, reported a case which emphasizes the danger of pancreatic disease following neglected cases of cholelithiasis. The patient, a woman, aged 44, suffered from stomach trouble for five years. She had bilious attacks every two or three months, lasting from three to four days to a week. Several stones were passed and operation was advised. On opening the abdomen a large fluctuating tumor presented, pushing the transverse colon downward and forward and the stomach to the left. It proved to be a cyst of the pancreas containing about three quarts of a thin watery fluid of a yellowish-green color. The sac was washed out thoroughly with normal saline solution and was stitched to the edges of the wound. Convalescence was uneventful, except for the abnormous quantities of fluid that came from the sac, and the digested, moth-eaten appearance of the abdominal wall around the mouth of the fistula. The patient made a good recovery.

Cholelithiasis Treated by Olive Oil.

DR. R. ALEXANDER BATE, Louisville, presented evidence to show that olive oil does dissolve fresh cholesterin calculi and that all conditions characterized by an excess of organic acids are accompanied by gallstones, and that, in nearly every instance, cholelithiasis is amenable to medical teaching. Only the bilirubin calcium calculi appear unchanged in the evacuations of those receiving olive oil internally. Surgery, Dr. Bate said, supplies the mechanical effect impossible to medicine, and has undoubtedly saved lives where exhaustion would have taken place before solution of the calculi could occur. Of 14 patients observed by the author, all of which had had some medical treatment, three were operated on and died. In two instances a recurrence took place. Nine patients had been apparently cured by the medicinal treatment.

Tuberculosis.

DR. JOSEPH WALSH, Philadelphia, stated that a person in good health is practically immune from tuberculosis. A run-down condition of health, due to overwork or dissipation, however, will create a susceptibility. Despite the popular belief to the contrary, he emphasized the fact that tuberculosis is not hereditary. He does not believe that the tendency to the disease even is inherited, though on this point there is still some difference of opinion. Observation of cases where the disease has appeared in families would rather lead to the belief, however, that the children of a tubercular parent are less susceptible than others. It has been shown that the children of tubercular parents rarely die of the complaint under fifteen years of age, in spite of the fact that they have been exposed to the contagion by the closest contact from infancy. Tuberculosis is communicated from the parent to the child, as measles or scarlet fever might be, but it is not inherited.

Europe, he said, is still in advance of the United States in its provision for the treatment of tuberculosis. England, France and Germany have many more sanatoria than there is in this country, but Walsh believes that better work is being done in those that we have. Climatic conditions are not essential factors in the cure of consumption. In the cure of tuberculosis, therefore, the only things necessary are rest, fresh air and good nourishment under proper direction. The best place to get proper direction or discipline is in a sanatorium. The purpose of the sanatorium is three-fold: (1) The cure of the patient; (2) The education of the patient and his friends in the way of prevention, in order to avoid further contagion; (3) The prevention of further contagion on the part of the patient for the time he is in the sanatorium. Early cases of tuberculosis with the ambition to get well and the patience to carry out a protracted course of treatment, can be cured in their own homes. It is, however, many times easier for the patient to carry out the necessary régime in a sanatorium.

Are sanatoria advisable? Dr. Walsh said it is only necessary to look over the world and see the opinions of both lay and medical men who have studied the subject. On the continent of Europe, that is, omitting England, the sanatoria are supported principally by insurance companies. In Germany, every employed individual, whether male or female, must be insured not only against death, but also against disability produced either by accident or disease. The insurance companies found that by building sanatoria they could not only cure a certain number of cases of tuberculosis, but they could prevent the disease in a sufficiently large number of others to make it worth the while.

COLORADO STATE MEDICAL SOCIETY.

Thirty sixth Annual Meeting, held at Denver, Oct. 9-11, 1906.

(Continued from page 1321.)

Hemorrhagic and Gangrenous Pancreatitis.

Dr. O. P. Johnson, Boulder, reported four cases of hemorrhagic pancreatitis in which the common bile duct and pancreatic ducts had separate openings. Dr. Johnston also reported a typical case of Hodgkin's disease, and exhibited the patient.

DISCUSSION.

Dr. William N. Beggs, Denver, referred to the importance of distinguishing between two conditions, one classified by Mayo Robson as the ultra acute form, which is to be regarded as the primary hemorrhagic condition, with the inflammatory phenomena added as a result, and the acute form, which is to be regarded as an acute parenchymatous pancreatitis with the hemorrhagic condition superadded. He believes that the acute parenchymatous form of pancreatitis is in nearly all instances toxic, the acting toxin being variable. Little is known about the means of diagnosing the fulminating form of the disease.

As to the cause of death, the view has been advanced that pressure, stretching or mechanical injury to the celiac plexus is the cause of the fatal result. Another theory is that death is due to total suspension of the so-called internal secretion of the pancreas, the secretion formed by the islands of Langerhans, which, by extensive death of the pancreatic tissue, are involved.

Dr. Frank E. Waxham, Denver, narrated a case of Hodgkin's disease which he saw five years ago. The patient was a young man, 23 years of age. The glands of the neck were very much enlarged. There was a tumor of the liver as large as a fist that could be clearly outlined. The case was inoperable. The patient was placed on *x*-ray treatment, and the result was marvelous, in that the enlargement of the glands, in the course of three months, entirely disappeared. The tumor of the liver also disappeared. There were no unpleasant results followed the use of the *x*-ray. Two years later the enlargement of the neck and the tumor of the liver had not returned. A year later the patient was still well.

Management of the Diabetic.

Dr. E. P. Hershey, Denver, said that the treatment varies according to the individual. Much harm is done by too rigid a diet. Acidosis, acetonuria, gastric disturbances and complications arise from a fixed diet. Carbohydrates may be given, if done so judiciously. The scientific technic is too difficult to be carried out by the general practitioner. Close observation, however, will aid much in the line of diet. It is possible that diabetes is first a functional disorder, eventually creating a vicious cycle. The treatment directed along this line will accomplish better results than any other. He cited several cases in which he has employed anhalonium (Mescale-button) in this disease with gratifying results.

DISCUSSION.

Dr. H. A. Black, Pueblo, said that the dietetic and hygienic management of diabetes has with him proven most successful. The dietetic treatment should not look to the elimination of the carbohydrates, but the individual should be considered and the diet so altered that the strength of the patient will not only be maintained, but increased. Many of these patients are nervous, spare in build, and they suffer the most if the carbohydrates are withdrawn. These patients should be given fat meats that they can assimilate, care being taken not to disturb the digestion, and combined with them as much carbohydrates as the patient will tolerate. It will be found very often that if there is complete withdrawal of the carbohydrates for three or four weeks, the patients will be able to take more of this class of food than they could before. Exercise should be adapted to the special individual.

Dr. E. C. Hill, Denver, has used the fluid extract of anhalonium in several cases of diabetes mellitus, with better results than he obtained from codeia and other agents.

Dr. Hershey, in closing, said he has never used a remedy that has effected so many cures, or has been as beneficial to the patient, as the fluid extract of anhalonium. He usually commences with six minims, four times a day. This may be increased, according to the judgment of the physician.

Dietetics: Diagnostic and Therapeutic Value.

Dr. C. D. Spivak, Denver, presented some general considerations of the physiology and pathology of nutrition. He considered the diagnostic value of test-meals and test-diets for ascertaining the digestive functions of the stomach and bowels and its relation to pain, discomfort, palpitation of the heart, etc. He alluded to the therapeutic value of foods acting medicinally as tonics and sedatives in general, and as gastric and intestinal tonics and sedatives in particular; acid and antacids, anodynes, anthelmintics, motor excitants, emetics, diuretics, diaphoretics, aphrodisiacs, lactogogues, etc. In discussing organo-therapy he spoke of the use of testiculin, spermin, thyroidin, adrenalin, cerebrin, medullin, etc., kephir koumiss cures; grape and orange cures, vegetarian and meat cures; water and dry cures; fasting and forced feeding.

The Profession and Its Advancement.

Dr. H. G. Wetherill, in the president's address, said that we have reason to be proud of the achievements of the American Medical Association in its coördinate bodies, state and county, in the direction of better organization and increased membership. In these particulars the Colorado State Medical Society has shared in the honors, more than doubling its membership in three years, and establishing itself on a basis that makes it a power in the community and a source of strength and inspiration to every one of its members. In its effort to raise the standard of medical education the American Medical Association, he said, has adopted a particularly commendable policy, and the minimum standard, as suggested by the Council on Medical Education, and adopted by the Association, should be universally approved and adopted by all medical schools, and its provisions rigidly and conscientiously enforced.

He commended The Journal of the Association and its courageous editor for the stand they had taken against the venders of nostrums and secret proprietary preparations.

The time is at hand, he said, when the number of graduates in medicine should be diminished rather than increased, and he believes that measures must soon be adopted for the further limitation of the number of medical graduates each year. Incidentally, he has hoped that this might be promoted in Colorado through the transformation of one of the medical schools into a postgraduate school of medicine. As there are but four cities on this continent where such postgraduate schools are conducted—Chicago, New York, Philadelphia, and New Orleans—it would be fitting and timely and altogether advantageous if one Colorado medical school could be so transformed. He hopes the day is not far distant when this suggestion may be considered seriously and some practical solution of the problem presented.

It has seemed to him that the recent graduates of medical schools are prone to give themselves over to special and limited practice far too soon after graduation, and with insufficient preparation for special work, depriving themselves also of the broadening influence of a few years of general practice.

In Denver the unrestricted and unlimited hospital privileges offered all comers have induced many untrained and incom-

petent persons to undertake serious surgical work which they can not execute with a reasonable degree of safety to the patient or to their own or to the hospital's reputation, with the result that there has been a too great, needless and inexcusable sacrifice of human life, and the hospitals and surgeons have been obliged to bear the reputation so acquired and share the opprobrium.

He condemned graft and grafters in the medical profession, and censured those who divide fees and give commissions.

Gastrointestinal Toxemia.

DR. HERBERT B. WHITNEY, Denver, described a form of gastrointestinal toxemia in infancy and childhood which, he said, is fairly common, but is not described in books. It pursues a typical course of from four to seven days. The chief symptom is fever. The gastrointestinal symptoms are not characteristic and are often lacking. The diagnosis is made by exclusion, meningitis and pneumonia being oftenest suggested. The prognosis is generally good. Complications are rare. Illustrative cases were cited.

Principles of Infant Feeding.

DR. A. G. TAYLOR, Grand Junction, said there is no substitute for mother's milk. The proper food for an infant deprived of Nature's method of feeding, is cow's milk, properly modified. The so-called prepared foods are not to be recommended. Whether or not the child is to become a healthy and vigorous adult depends to a large extent on its nutrition in the earlier months of its life. Of all the factors that enter into the problem, digestion and assimilation stand preëminently at the head. The child should be fed in such a manner as not only to escape the early effects of indigestion, diarrhea, etc., but the subsequent dangers of nutritional diseases, as scurvy, rickets and marasmus, and the possibility of degenerative troubles.

Swing of the Pendulum, or Renaissance of Internal Medicine.

DR. T. B. MOORE, Canon City, said that internal medicine has been partially eclipsed in the last two decades by the brilliant achievements of surgery. As young men are attracted by the latter, they neglect the former, despite great advances. Surgery is attractive, in part, because of better compensation. The question of fees, especially the division of fees in referred cases, must soon be settled by a fuller recognition of the claims of the general practitioner.

The chief factors in producing conditions antecedent to the beginning of the renaissance are ignorance of the public in relation to medical matters; failure to emphasize therapeutics and prescription writing by medical teachers; an awakened public as the result of exposure of fraud by proprietary medicine, and nostrum vendors; an outraged profession as a result of unethical advertising in medical journals. The coming renaissance will relegate polypharmacy to the rear. There will be improved therapy as a result of a more rational conception of disease.

Has Regular Medicine Kept Pace with the Art of Healing?

DR. J. K. MILLER, Greeley, said that from the earliest prehistoric application, the art of healing has been modified from century to century. Regular medicine was the first system which was established with any permanency. It met its first opposition about the dawn of the nineteenth century in the discovery of similars by Hahnemann. The regular school was then, and is now, so closely wedded to medicines that it often proceeded to its detriment along lines as unscientific as those of veriest quackery. It must be held responsible for the heterodox systems now clamoring so loudly for patronage and state recognition. The trend of modern life, the search for wealth, the dissipations of comfort and luxury have produced many physical evils in which medicine does not obtain. Divine healing, Dowieism, Eddyism and kindred cults have met with such unprecedented recognition as to indicate the necessity of emphasizing psychic rather than material remedies.

The Free Dispensary as a Factor in the Tuberculosis Crusade.

DR. A. S. TAUSSIG, Denver, spoke of the benefits to be derived from the *free* dispensary by the public and the medical profession. He pointed out the harm that follows in the wake of free dispensaries. He laid stress on the duties of medical colleges and other organizations that support free dispensaries, and pointed out the relations of such dispensaries to the medical profession at large.

Physician in Politics.

DR. CHARLES F. ANDREWS, Longmont, believes the time is opportune for the medical profession to take a political stand and thereby receive proper medical legislation. All practitioners should be known politically as men who place their membership in the American Medical Association far above all partisan political faith. Physicians should study city, county, state and national politics.

The Doctor and the Public.

DR. E. STUVER, Ft. Collins, pointed out (1) the ancient origin and function of the early physicians. (2) The demoralizing effect of the Dark Ages on medical science. (3) The relative importance hitherto attached to war or life-destroying as compared with medicine, a life-saving vocation. (4) The necessary qualifications for the successful physician: (a) he should have a strong physical organization; (b) he should have a broad, thorough, general and scientific education; (c) he should be of unimpeachable character, and should have careful moral training. (5) A properly qualified and impartial board of examiners should pass on the character and qualifications of every applicant who desires to practice medicine. (6) Physicians should take an active part in all sanitary matters. (7) "Patent" and "fake" medicines should be opposed by the united efforts of the medical profession.

Surgical Aspects of Stomach Disorders From the Standpoint of the Internist.

DR. JAMES RAE ARNEILL, Denver, said there is an increasing tendency to resort to the surgical treatment of certain chronic and acute diseases of the stomach. Operative interference should not be indiscriminate, but should be controlled in most instances by a careful, painstaking study and resort to well-recognized diagnostic measures. He described cases which are cured or helped by surgery; also cases which surgery does not help. Increasing experience is teaching more wisdom in the selection of cases. The surgeon and the internist should work hand in hand, as correct diagnosis and accurate appreciation of the *tout ensemble* are of paramount importance. He considered the easily applied and useful diagnostic measures, and presented conclusions drawn from a study of cases before and after operations.

Observations on Experimental Stomach Surgery.

DR. A. R. POLLOCK, Antonito, reported observations based on thirty-six operation on dogs. 1. Gastroenterostomy by the Murphy button; at the end of three days the abdomen was opened, and button found *in situ*. 2. Gastroenterostomy by the Murphy button; at the end of five days the abdomen was opened, and button found *in situ*. 3. Gastroenterostomy by the Murphy button; at the end of six days button was found free for 4/5, but still holding by 1/5 of its circumference. 4. Gastroenterostomy by the Murphy button; at the end of eight days the button was found in the ileum a few inches below the site of anastomosis. 5. Gastroenterostomy by the Murphy button; button passed by animal on tenth day. 6. Gastroenterostomy by the Murphy button; on fourteenth day button was found in the ileum. 7. Gastroenterostomy by the button; on fifteenth day button was found *in situ*, although the tissue in the bite of the button had sloughed away. He concludes that the time required for the button to free itself and pass from the site of anastomosis varies greatly, but at least seven days are required.

Ectopic Gestation.

DR. T. A. STODDARD, Pueblo, said that Tait was the first to formulate conditions and methods of procedure definitely. The true cause is indefinite and more difficult of elucidation in individual cases than are the causes of appendictis. It is certain, however, that the malformation of tubes and uterus is no more a causative factor than diseased condition of these organs. Many cases go unrecognized, nature coming to the

rescue and the patients recovering; others die after the first sudden exhausting hemorrhage, and this is more likely to occur when the rupture is near the uterine end of the tube, and hence during the early weeks of the existing pregnancy. He does not believe that a long period of sterility is in any sense an indication—in conjunction with other symptoms—of the existence of an ectopic gestation.

The diagnosis, if possible, should be made before rupture; but many patients do not consult a physician until rupture; in fact, rupture sometimes occurs before the patient suspects that she is pregnant.

Surgical procedure is the only thing to be considered for the relief and cure of these patients. Attempts to palliate the condition or to destroy the fetus by hypodermics, electricity or medicine belongs to a past age, when abdominal surgery was scarcely thought of. Operation through the vagina is an evidence of grave uncertainty of diagnosis, and can only result in incomplete and bungling surgery, and is only attempted by men who have made or are making strenuous efforts to convert the vaginal canal into a highway by which they may reach notoriety.

Mind Cure: Its Service to the Community.

Dr. Richard C. Cabot, Boston, said that the mind cure movement has rendered notable public service because its main ideas are important and in spirit, if not in their letter, true. The mind cure movement exerts the force of healthy criticism on the tendency of physicians to (a) ignore the possible aggravation of disease by mental effects of the methods of diagnosis and treatment which they use; (b) to encourage the truth habit; and (c) to treat neurotic cases either by an attenuated and diluted mental régime or by "sitting on the safety-valve."

Bradycardia in Appendicitis.

Dr. Maurice Kahn, Leadville, does not recall encountering bradycardia in a case of appendicitis that did not present gangrene. In the last six cases of gangrenous appendicitis in which this symptom was evinced the diagnosis of the gangrenous stage was made before operation, based on the bradycardia alone, so that given a case presenting other unmistakable signs of appendicitis, with a subnormal pulse, a tentative diagnosis of gangrene may be maintained.

The cause of this symptom in appendicitis is probably to be ascribed to the absorption of a ptomain or ptomains into the system which act on the cardiac centers or ganglia, as is not infrequently seen in jaundice, chronic digestive disturbances, etc., but is not akin to the slow pulse observed during convalescence from some of the acute fevers, wherein it is local evidence of impaired reactive power, the result of inanition. Cases were cited in point.

Peritoneal Drainage.

Dr. D. P. Mayhew, Colorado Springs, prefers the rubber tube of large caliber to glass tubes or gauze. He reported seven cases of diffuse purulent peritonitis, with one death, which were treated with drainage and but little surgery. The indications in these cases are met best by rapid operation, with as little handling of the abdominal contents as possible, even to the point of allowing the original focus to remain, if not easily and quickly removed; drainage in the Fowler position by means of tubes or gauze, or both, brought out at the lowest available point, and reaching the lowest pouch of the peritoneum; copious salt solution enemata, three to four quarts in twenty-four hours; prevention of peristalsis by allowing nothing by the mouth. If these procedures be followed faithfully, the mortality may be kept down to a comparatively low point.

Attitude of General Practitioner Toward Obstetrics.

Dr. E. E. Evans, Fort Morgan, emphasized the importance of cleanliness in obstetric work, including the refusal of the general practitioner to attend labor cases when in attendance on patients ill with contagious diseases. He said there is a crying need for teaching more thoroughly the more common operations of obstetrics, and that obstetrics should receive more consideration in comparison with surgery.

The Successful Obstetrician.

Dr. D. V. Meiklejohn, Somerset, said that practical bedside work is essential in the training of the new physician. Obstetrics receives too little attention in our societies. Close cropping of the hair and washing of external parts with soap (sterile), and an antiseptic douche, prepare the average patient for labor. Frequent examinations are fraught with danger. The same may be said with regard to introducing fingers into the vagina to assist in delivering the placenta by making traction on its folds. He sees no objection to making slight traction on the cord and delivering the placenta by Credé's method. Perineal lacerations should be repaired at once; cervical lacerations not until after the lying-in period. He sees no merit in the abdominal binder, but uses it more as a placebo.

Miscellany

Influence of Thyroid Feeding on Susceptibility to Poisons.—The experiments of Reid Hunt (*Jour. of Biologic. Chemistry*, Vol. 1, No. 1) show that thyroid feeding renders white mice much less susceptible to the toxic action of acetonitril, but has no effect on the toxic dose of sodium nitroprussid or of hydrocyanic acid. This indicates that the thyroid preparation does not act by increasing sulphur compounds by metabolism of proteids, but by some specific antitoxic power. Proteids (such as casein, nutrose, peptone), nuclein and preparations of the thymus and of the suprarenal glands counteract to some extent the neutralizing or protective power of thyroid gland against acetonitril. It was found that thyroidectin increased slightly the susceptibility of mice to acetonitril.

What Is an Alkaloid?—W. A. Puckner in the *Pharmaceutical Review*, 1906, Vol. XXIV, p. 228, discusses the meaning attached to the term alkaloid by different authorities. He states:

> It is well known that the term "alkaloid" is subject to several definitions. While some apply the term to all vegetable bases, that is, to basic bodies occurring in plants, others restrict the word to those basic substances derived from, or related to pyridine. According to the latter interpretation caffein, theobromin and even morphin are not alkaloids. Further, whether the first or second definition be accepted, the term base is still open to different interpretation. While some alkaloids react with water to form hydroxids which are strongly ionized and hence are "strong bases" and form well-defined salts, the hydroxids of others show little tendency to ionize, hence their salts, in presence of water, because of hydrolysis break up into free base and acid. Thus while salts of caffein may be prepared, these when dissolved in water are so largely hydrolized that the free base may be abstracted from such a solution by means of immiscible solvents. Therefore, even if the first definition be adopted it is still a question whether or not caffein is to be considered an alkaloid. In the seventh revision of the United States Pharmacopeia caffein is described not as an alkaloid, but as a feebly basic substance; yet under the prescribed tests of purity appears one which "shows the absence of other alkaloids" and one is left in doubt whether or not caffein is considered to be an alkaloid. In the eighth revision it is again stated to be a feebly basic substance, but the test just referred to is said to indicate "absence of alkaloids" and from this it would appear that, officially, caffein is not an alkaloid. With this point of view the subcommittee on proximate assays appears not to have agreed, since fluid extract of guarana is required to contain in 100 cc. "3.5 gm. of the alkaloids from guarana."

The Milk Question in Maryland.—The association of a number of the citizens of Maryland in the effort to advance the cause of the prevention of tuberculosis which resulted in the holding of the Baltimore Tuberculosis Exhibition has resulted in similar combined effort to improve the milk supply. This was attempted by a series of public lectures and exhibitions of model dairies, nurseries, laboratories, etc. The results are not yet fully known, but according to H. W. Steele (*Charities and the Commons*, Aug. 4, 1906), more rigid inspection by public officials has been secured, dairymen have been stimulated to improve their methods, the physician is demanding more "certified milk," and the layman takes more thought concerning the milk which he uses than he ever did before. This number of *Charities and the Commons* contains some instructive pictures of the exhibition and abstracts of the various lectures. J. S. Fulton draws a striking picture of the possibilities of the contamination of milk by the middleman after

it has left the dairy, and urges that clean milk can only be secured by requirements which will necessitate an increase in price to the consumer. G. W. Goler states it as his belief that most babies become sick because they are infected by the bacteria and poisons of stable manure contained in dirty milk, and that to keep children well it is necessary to protect them from the dirt in milk just as much as we would protect them from diphtheria or scarlet fever infection. S. C. Prescott believes that the farmer's side of the case has not always been fairly considered. He thinks that "if the farmer were to receive five or six cents a quart and were told how to produce clean milk, many of them would do it. This would mean, of course, that milk should cost the consumer ten cents, which is a reasonable figure compared with the cost of other foods." G. M. Kober, in treating of morbific and infectious milk, again emphasizes the fact that "ideal milk supplies can not be attained without increased cost of production, and in the interest of public health and the many helpless babes deprived of their natural food, we should be loyal to our American conception of 'square deal.'" The concluding lecture is by A. Jacobi, and deals with the "Rôle of Pure Cow's Milk in Infant Feeding." These articles indicate a gratifying public interest in this important subject. The necessity of providing pure food for babies is so evident as to need no comment except to approve every effort in this direction. It may be debated, however, whether or not the nutritive value of milk as a food for adults will justify any great increase in its price. At ten cents a quart milk solids would cost about forty cents a pound, or making allowance for the greater nutritive value of fat, would be six times as expensive as flour. If practicable, it would seem that the goal might be more surely reached by encouraging the production of a special milk for infants, children and invalids, allowing the sale of a cheaper milk for adults, which, however, should be made to conform to reasonable regulations regarding cleanliness.

The Labyrinth in Various Animals and Birds.—Albert A. Gray, Glasgow, in the *Journal of Laryngology, Rhinology and Otology*, reports his studies of the anatomy of the internal ear in sixteen mammals, and finds that the various orders and species present differences in three main types. 1, Differences in shape of the cochlea; 2, differences in size of the perilymphatic space of the semicircular canals; 3, differences in the size of the otoliths. The cochlea appears in mammals in two types in addition to the peculiar type of the organ found in the monotremes. These types are the sharp-pointed cochlea found in the carnivora and the rodents, and the flattened cochlea found in man, monkeys, lemurs, ungulates and cetacea. The one exception found among the carnivora is the seal. In regard to the perilymphatic space, Gray states that in the human subject this space is large and well developed, and that it has been assumed that such would be the case in the lower animals, but investigation proved that this is not the case. Man is one of the exceptions to a very general rule. In mammals, as a rule, the perilymphatic space is either very small or even completely absent in the canals. The exceptions to this rule are man, monkeys and seals. Gray states, however, that it is possible that the original type of the mammalian labyrinth possessed a well-developed space as in the reptiles and birds. This is the type invariably found in all the specimens examined. At present, he states, the presence of a well-developed perilymphatic space in the canals may be regarded as indicating a labyrinth of a more ancient type. He considers the presence or absence of this space a valuable guide to the relationship of different orders and species of animals, and that its value is enhanced by the fact that the space does not appear to have any physiologic function, even as regards equilibrium. The otoliths of mammals have seldom been examined carefully, it being assumed that they are small. This assumption, Gray states, is in the main correct, but he has discovered two exceptions, the porpoise and the seal.

Chemical Discoveries in Switzerland and Germany.—According to the *Zeitschrift des Allgemeinen osterreichen Apotheker*, a commercial treaty is under consideration between Switzerland and Germany which will give the protection of the patent laws to chemical discoveries. It is proposed by the Swiss federal council, however, to except medicines from the protection of patents. This is in accordance with the desires of the Swiss pharmaceutical association that the price of these articles may not be enhanced. The chemico-pharmaceutical industry demands protection for the process of preparation with the intent that the material, the medicine as such, shall remain free. This request is warmly supported by the press of Basle, a city which is prominent in chemical manufacture. It is claimed that the chemist has the same interest in the discovery of a remedy as in any other technically applicable discovery. The exclusion of new processes of manufacture of medicines from the protection of the patent laws must have the effect of restraining the eagerness of the chemist to enter on such investigations. To secure the protection of pharmaceutico-chemical processes the chemical trade of Basle has addressed a circular letter to the members of the national council and the committees of the national and cantonal legislatures. The representatives of the chemical industries claim that patenting the process of manufacture will not increase the price of the medicine. But a writer in *Der Bund* refutes this claim by showing that the price of articles protected by patents on manufacturing processes are from ten to fifteen times higher in Germany than in Switzerland. The sudden cheapening of patented products when the patent expires indicates the same thing. It is noticeable that the German manufacturers in making application for patents are careful to include other processes for making the same product, so far as possible, thus securing to themselves the same monopoly as if the product itself were patented.

Intestinal Putrefaction.—Leo F. Rettiger thus summarizes the results of his work on putrefaction in the *Journal of Biologic Chemistry*, August, 1906. Putrefaction is the work of anaërobes, and of all the organisms examined thus far of strict anaërobes only. The best known of the putrefactive anaërobes are *Bacillus putrificus*, the bacillus of malignant edema and the bacillus of symptomatic anthrax. Egg-meat mixture and blood fibrin are readily decomposed by them, yielding the foul-smelling products that are so characteristic of real putrefaction, particularly mercaptan. In pure cultures of these organisms, however, indol, skatol and phenol are not produced, or only in very minute quantities. Except in a few rare instances, putrefactive organisms of the above type have not been observed in feces, either of normal persons or of those suffering with pernicious anemia, even when the stools had a decidedly offensive odor. In the large majority of cases, however, feces have a more or less putrefactive action on the egg-meat mixture, sometimes causing a reduction in the bulk of the proteid of from 25 to 30 per cent. This action is most pronounced, as a rule, after heating the tubes for ten minutes at 80 C. This heating favors putrefaction, probably by destroying organisms of the colon group already existing in the tubes and thus removing their inhibitory influence. The *Bacillus enteritidis sporogenes* of Klein is regularly present in human feces, and although commonly regarded as being a purely fermentative organism, it may be at least partly responsible for putrefactive changes in the intestine. The observations recorded in this paper strongly support the view of Bienstock that the *Bacillus coli communis* and *Bacillus lactis aërogenes* are not harmful inhabitants of the intestine, as is so often thought, but that their function is a protective one. Their presence in any putrefying medium is a hindrance to the work of the putrefactive bacteria, and therefore serves as a check on their activities.

Solubility of Uric Acid.—His and Paul found the solubility of uric acid in water to be nearly 1 part in 40,000. A. E. Taylor (*Jour. of Biologic. Chemistry*, January, 1906), finds that in bovine blood saturated with carbonic acid it is soluble to the extent of 1 part in 1,000, or forty times as soluble as in water. The increase of solubility is not due to combination with the alkaline metals of the blood, which is prevented by the presence of excess of carbonic acid. The increased solubility due to absorption by colloids is considerable since a solution of neutral globulin in water will hold about five times the amount soluble in the same volume of water. The larger part of the uric acid must therefore be held in some

complex combination, in which the uric acid figures in all probability as the molecule. Taylor calls attention to some misconceptions regarding the relations of the uric acid in the blood. There are only two kinds of uric acid salts with metals known. For instance we have mono-sodium urate and di-sodium urate. Both these compounds are alkaline, the mono-sodium urate being only feebly so. The so-called quadri-urate does not exist so far as known. Taylor believes that the blood can not properly be called alkaline, but is in reality neutral, and that variations in the solubility of uric acid in the blood do not depend on variations in the alkalinity of that liquid. He has found uric acid present in bovine serum, but has made no study of human blood serum as the quantities of blood necessary render such an investigation impractical.

The Awakening.—The whole medical profession of this country is just waking up to the fact that it has been slumbering and dreaming for many, many years, says the *California State Journal of Medicine*. But already signs of a new activity are in evidence in many portions of our country. In many communities the best physicians will not make insurance examinations for less than $5. They are discussing the lodge practice evil and coming to realize the insult to professional intelligence in proffering a pittance for wholesale professional services. Most physicians who are not either moribund or densely ignorant are beginning to ask "impertinent" questions about the composition of the all too numerous "secret proprietary" medicines offered to them by glib-tongued "detail men." Occasionally we hear a protest against the gratuitous educational remarks of some boorish drummer who undertakes to tell physicians all about the special and particular virtues and advantages of the nostrum manufactured by his particular "house." Most of the state journals are very much awake and are working hard to try and wake the slumbering members of the profession; but, unfortunately, some are either asleep or, to judge from their advertising pages, are to be classed with the predatory privately owned journals. Doubtless the respectable element in these particular associations will prevail in time and these few state journals will then cleanse themselves and "be good."

Proprietary Remedies in Austria.—While in the United States organized attempts to oppose the encroachments of proprietary remedies have originated entirely or almost entirely with the medical profession, in Austria, according to the *Pharmazeutische Post*, Aug. 12, 1906, the matter has been taken up by the pharmacists who have prepared a list of prescriptions called "*prescriptiones Viennenses*," which are to be used as substitutes for the principal specialties and which are to be kept in stock by the pharmacist who will dispense them on physicians' prescriptions in ordinary medicine bottles and with any additions that the physician may order. The objectionable literature that reaches the patient with the original packages of the ordinary proprietaries is thus avoided and the medicine is at the same time cheaper for the patient. The physician is not obliged to write out every time the exact ingredients of the mixture, but can refer to it by a convenient name. These preparations have been devised by a Vienna specialty commission representing a number of Austrian pharmaceutical societies, and an appeal has been made to medical men to give the movement their support on the ground of economy to patients, avoidance of self-prescribing, control of quality of drugs, retention of confidence of patients.

A Plea for Organization.—The medical profession of the United States is on trial to-day before the people of this great country as to whether it is capable of compact and complete organization. The unit is the county society. Unless we can combine these in a strong state body we are scattered bands and can accomplish but little. By united action we can make the county and state societies what we will to make them—we can adopt such means and put such men in power as will best promote and represent the aims we have in view. The power is with us if we only choose to organize and use it. The opportunity is a great one; and no physician can afford to be dominated by the little things and withdraw his hand from the greater work. For self-protection alone we need this power—we need it, too for higher reasons, which every true physician appreciates, to increase the usefulness of a noble and responsible calling, and bring better rewards to those who serve faithfully. The cost is insignificant, the good to be attained is boundless, or at least bounded only by our faith and our work. Let us come together and stand together like men.—B. F. Eager, in *Kentucky State Medical Association Bulletin.*

The Value of the Hospital Kitchen.—The first place in which all the best scientific knowledge of food as a remedial agent should be applied is in the hospital kitchen. The hospital kitchen of the future will rival the operating-room in cleanliness and convenience when it is clearly recognized that the skill of the physician or surgeon is of but little avail if the diseased and inflamed tissue can not be replaced by normal conditions. Nothing but food can furnish the blood-current with the substances from which the cells may choose those essential to them. However fully he may be sustained for a time by the products of the chemist, it is of the utmost importance to the final recovery of the patient that he desire natural food in sufficient quantity to regain his strength. The neglect of the heart of the whole hospital, the kitchen, is hard to understand until we realize that this same neglect permeates the community in regard to individual homes, and that the medical schools treat of food only in relation to disease, and not in relation to healthful living.—*National Hospital Record.*

A Higher Plane of Conduct.—Why do we linger on the threshold of the most promising organization ever set before us when the needs of the times demand this of almost every calling, not only to succeed but to survive? It is hardly reasonable to say that there is more selfishness and unscrupulousness in this than in other vocations, when the calling itself demands and develops the higher and more generous traits—when the very atmosphere not only tends to develop these, but to restrain the baser tendencies. Considered even from a selfish standpoint, organization would enable us to maintain a higher standard by the mutual improvement and inspiration of association, making us better acquainted with each other and giving us more sympathy one for another, and clearing away many times misunderstandings, and keeping us all, by a sort of generous rivalry, on a higher plane of conduct and bearing toward one another and toward the world.—B. F. Eager, in *Kentucky State Medical Association Bulletin.*

Separation of Morphin from Glycerin.—H. M. Gordon (*Amer. Journal of Pharmacy*, 1906, page 464) reports that separation of morphin from solutions containing glycerin is exceedingly difficult. After trying various methods he found that the following gave the best results: The glycerin solution of morphin sulphate is treated with an excess of normal iodin solution and the liquid diluted with water to about three times the original volume. On standing over night about 80 per cent. of the morphin taken crystallized out as the characteristic morphin hydrogen triiodid. The crystals were collected on a small filter, washed with water containing a little Wagner's reagent and then dissolved by adding a few cubic centimeters of a 10 per cent. solution of sulphurous acid. In this way the alkaloid is obtained in a liquid perfectly free from glycerin. On adding a slight excess of potassium carbonate and heating to about 100 degrees for a minute or two the alkaloid will crystallize out on standing.

Liability in France for Surgeon's Fee.—It is reported that a surgeon was called to a very sick woman in Paris, and that her mother begged the physician to "save her daughter at any price." An operation was performed, but the patient died. The surgeon's fee was $6,000, which the woman's husband, a comparatively poor man, was unable to pay. The surgeon then sent the bill to the mother and, on her refusal to pay, appealed to the court. The court held the husband responsible and freed the mother from all liability, but appeal to the higher courts resulted in a reversal of this decision. The judge accepted that the appeal to the surgeon to save the daughter at any cost was an order to operate, and the mother was compelled to pay the fee.

Detection of Formaldehyd in Milk.—S. F. Acree has investigated Hehner's test (*Jour. of Biol. Chem.*, August, 1906) and finds that it is sensitive to the degree that it will detect 1 part of formaldehyd in 250,000. By fractional distillation it is possible to collect the formaldehyd so as to detect 1 part in 3,000,000 in 20 c.c. of milk. No other aldehyd tested gave the reaction except vanillin. The reaction is due to the proteids of the milk and is more intense the greater the proportion of proteid. Other complex proteids give the same reaction. The most intense reaction is produced by the globulin from squash seed; this becomes a valuable substance to add to solutions to be tested for formaldehyd. The reaction is made by mixing the milk with an equal volume of water and four volumes of concentrated sulphuric acid in which there is a small amount of a ferric salt. If formaldehyd is present in minute quantity the solution soon acquires a violet color.

History of Medicine.—Just why medical colleges do not provide for the teaching of the history of medicine is because the curriculum is already filled to overflowing, and the harassed student does not need to be further overburdened. One may think what he will, but the reason why so many seek the walks of medicine in life is to make a livelihood, believing it can be done with very little work. After trying for a while the tyro generally finds that he has made a huge mistake, and very often wishes for other employment. The study of medicine is a pleasurable and interesting study; the practice is a very different thing. One way to accomplish instructing the student body in both the history of medicine and the code of ethics is to take these matters up in their own medical and literary societies, which now seem to be pining away for want of support. We can not too often keep before us the example of the masters of the past.—*Dominion Medical Monthly.*

Toxicity of Sodium Chlorid.—W. J. V. Osterhout (*Jour. of Biologic. Chemistry*, March, 1906), has shown that dilute solutions of sodium chlorid quickly kill spores and young plants of certain algæ, although they will all live in distilled water for weeks, and will live and grow in sea water or in mixtures containing small quantities of magnesium chlorid, magnesium sulphate, potassium chlorid, and calcium chlorid in addition to sodium chlorid. The added salts taken singly are nearly as poisonous as sodium chlorid, but in their mixture the individual toxic actions counteract each other so that the solution is harmless. Loeb has termed such a mixture a balanced solution and has emphasized the fact that the blood as well as the sea water is in fact such a solution. Such investigations are very suggestive of the disturbance that may arise from changed relations among the inorganic salts of the blood.

Colloidal Form of Strychnin.—O. H. Brown (*Jour. of Biol. Chem.*, August, 1906) finds that strychnin mixed with hydrogen dioxid and albumin, yolk of eggs, or organic extracts will gelatinize in about six weeks, producing a mixture or compound with the proteid which is toxic by the stomach only after digestion has occurred, and is only very slightly toxic if injected subcutaneously. It is not probable that the strychnin is oxidized by the hydrogen dioxid, but other antiseptics can not be substituted for it in the production of the strychnin jelly. The presence of the albumin or other organic matter in the jelly appears to interfere with the ordinary tests for strychnin. It is probable that other alkaloids may combine with proteids in a similar way. The experiments of Brown indicate that this is certainly the case with suprarenal alkaloid.

Acetonuria After Anesthesia.—The study of the urine in 41 cases of anesthesia by Helen Baldwin (*Jour. of Biologic. Chemistry*, January, 1906) confirms the results of Greven, Brewer, Bevan and Favill, who found acetone in the urine following anesthesia. Dr. Baldwin found it in all but three cases. The other characteristics of the urine were higher specific gravity and more strongly acid reaction. The amounts of ammonia and of organic acid were usually decreased, and the products of intestinal putrefaction were not materially altered. The kind of anesthetic and the duration of the anesthesia exerted no particular influence on the appearance of the acetone, and as the anesthetic in these cases was followed by no untoward result the appearance of acetone may be regarded as a perfectly normal phenomenon after anesthesia.

Book Notices

HOW TO SUPPRESS A MALPRACTICE SUIT, and Other Medical Miscellanies. By Thomas Hall Shastid, A.M., M.D., LL.B. Cloth. Pp. 128. Price, $1.50. Marion, Ill.: Marion Publishing Co., 1906.

To judge from the title on the cover and from the running heads on each page throughout this book, one would naturally conclude that it was a treatise on "How to Suppress a Malpractice Suit." As a matter of fact there is but one chapter devoted to the subject, and the book bears the title of this chapter. The advice given in this first article is of such a character that no honorable, self-respecting physician could follow it. The other chapters are on various matters of more or less interest to physicians and make interesting reading.

TECHNIQUE DU TRAITEMENT DES TUMEURS BLANCHES. By F. Calot, Chirurgien en chef de l'hôpital Rothschild, etc. Paper. 192 Illustrations. Pp. 272. Price, 7fr. Paris: Masson et Cie, Editeurs, 1906.

The words "*Tumeurs blanches*" are the French equivalent of the English popular term "white swellings" commonly used to signify the tuberculous swellings of the joints. In the present volume the subject is considered from a therapeutic point of view and the treatment mainly advocated is not that of long lasting fixation in plaster casts or resection, but the use of intra-articular injections of antiseptics, including mixtures of ether, creosote and iodoform, or camphorated naphthol in glycerin, formulas for which are given. The technic is given in the fullest detail and the author, basing his opinions on his own experience, advocates this in preference to all other methods, though he does not entirely exclude the use of orthopedic measures in the treatment or of operations in special cases, and, of course, he does not neglect the later methods of massage, electrization and exercise. The principal thing in his method, however, is to get at the tuberculous focus, and this by methods other than severe cutting operation. To insure the functional recovery the plaster applications should not be continued too long, and the limb should be kept at rest six months after the removal of the envelopes. By this means Calot claims he can cure the great majority, even 90 to 100 per cent. of the cases, and if an ankylosis or stiff joint should still be the result, the limb will nevertheless be in good position without loss of length and capable of doing considerable good service. The cure will require also much less time than by the old non-cutting methods and can be accomplished by the ordinarily skilled practitioner without serious risk. He claims a personal knowledge of over a thousand cases of cure treated almost exclusively by this method. Whether the method is all that the author claims for it is yet to be proven.

INFLUENCE OF THE MIND ON THE BODY. By P. DuBois, M.D., Professor in the University of Berne. Translated from the Fifth French Edition by L. B. Gallatin. Cloth. Pp. 63. Price, 50c. net. New York: Funk & Wagnalls Company, 1906.

This little work is intended for the public rather than for physicians. It is a readable and sensible explanation of the principal facts regarding the effect of the mind on the body in the production of morbid feelings and the simulation of actual disease. We say actual disease, although the disease as it is felt by the patient is often sufficiently real to him at least, and it appears that the increase of nervousness in our modern civilization is as marked abroad as it is in this country. The hygienic instructions here given are sensible, and we believe the translation and presentation of the work to the English reading public will do good. The translation is admirable and the publishers have produced the work in a very attractive form.

LE VIEILLISSEMENT ARTIFICIEL DES VINS ET SPIRITUEUX. By Frantz Malvezin, Directeur de Penophile, etc., 16 Illustrations. Paper. Pp. 95. Price, 1 fr. Paris: Jules Rousset, 1906.

This work is of economic rather than of medical interest, but the subject has also its medical side. Wines and liquors are perhaps, of all articles of diet, if they could be thus included, the ones most subject to sophistication and adulteration. It is very possible, if not indeed probable, that by far the largest proportion of the alleged foreign wines and liquors sold in this country never saw a foreign country, or, if they did, are not the genuine article they claim to be. Moreover, the genuine article itself, in its most desired pure and perfect state, is not always obtainable at its place of production, and when it is

thus obtained it is only as the result of a tedious process of aging, care and treatment, involving enormous losses which correspondingly increase the price of the perfected article. To prevent such losses and for the profit of the producers, some 60 or 70 patents have been issued in France for the artificial perfection of French wines and cognacs during the last 25 years. The present little volume treats of the methods of artificially aging the French wines and liquors, a sort of sophistication that is objectionable insomuch as it may be reasonably assumed that the artificial process can hardly reproduce the natural product, and it is not likely that it will bring about the possibility of a more authenticated supply of the average French wines and liquors in common use. As the French manufacturer in the story said to his son, "You can make wine of anything, even grapes."

PRESERVATIVES IN FOOD AND FOOD EXAMINATION. By John C. Thresh, M.D. (Vic.). D. Sc. (Lond.). F. I. C., and Arthur E. Porter, M.D., M.A. (Cantab). Cloth. Price, $4.50. Pp. 484. Philadelphia: P. Blakiston's Son & Co., 1906.

The great interest at the present time in the question of food preservatives is likely to secure a wide circulation for the book before us. The names of the authors, in themselves, tend to create confidence in the general accuracy and fairness of the treatise, and a rather detailed examination of this book shows that such confidence on the part of the reader will not be misplaced. In addition to a discussion of the nature and amount of preservatives ordinarily added to certain classes of foods, methods for the detection and estimation of various impurities and preservatives are given, and the legal aspects of the subject from an English standpoint are presented with great fulness. On the whole, the book can be depended on for an impartial view of the many vexed questions that arise in connection with these topics. It might be, indeed, urged that the desire to maintain a judicial attitude has sometimes led to mention or even elaboration of data of doubtful value; but while the evidence is so conflicting as at present it is to err in the right direction. Altogether the book can be recommended as a fair and full summary of our present knowledge regarding food preservatives, their abuses and dangers. Later editions of the work, if they appear, will probably treat the material in a more critical fashion; and, it might be added, new evidence that will permit of more critical treatment is sadly needed in many directions. Some plates of doubtful value and an excellent index conclude the volume.

A TEXT-BOOK OF SANITARY AND APPLIED CHEMISTRY, or The Chemistry of Water, Air and Food. By E. H. S. Bailey, Ph. D., Professor of Chemistry, University of Kansas. Cloth. Pp. 343. Price, $1.40. New York: The MacMillan Company, 1906.

This is not a medical work, but is intended for students who have had a high-school course in chemistry and to whom some knowledge of the applications of chemistry to the daily life of the household will be useful. While primarily intended as a text-book, it includes material derived from government reports and elsewhere, so that it will prove valuable for general information and reference. Some experiments are introduced which generally require simple apparatus. The sanitary teachings of the book are generally correct. The notion that sewer gas is a source of infection is corrected by the statement that sewer air has been found to contain fewer microbes than outside air! The statement that certain waters may convey malaria is liable to give rise to misapprehension, although offset by the statement that collections of water in shallow pools give opportunity for the breeding of mosquitoes that transmit the infection. Some instructive examples of the dependence of epidemics on the nature of the water supply are given, but the bacteriologic side of the subject receives rather scant notice, in consideration of its importance.

The very sensible remarks regarding cereal breakfast foods will tend to produce a more just estimate of the value of these "predigested" foods in relation to the cereals from which they are obtained. The results of Atwater's experiments on alcohol are given due credit, but the conclusion is reached that "although alcohol has some right to be regarded as a food, yet it is not a food of any practical importance." While the book is perhaps not sufficiently detailed for the use of the physician, it may well be recommended to lay readers who desire to gain a knowledge of these important subjects.

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

NEVADA State Board of Medical Examiners, Carson City, November 5. Secretary, S. L. Lee, Carson City.

NEBRASKA State Board of Health, State House, Lincoln, November 7-8. Secretary, Geo. H. Brash, Beatrice.

MAINE Board of Registration in Medicine, Portland, November 13. Secretary, Wm. J. Maybury, Saco.

CONNECTICUT Medical Examining Board, City Hall, New Haven, November 13-14. Secretary, Charles A. Tuttle, New Haven.

MASSACHUSETTS Board of Registration in Medicine, State House, Boston, November 13-14. Secretary, Edwin B. Harvey, State House,

WEST VIRGINIA State Board of Health, The Frederick, Huntington, November 13-15. Secretary, H. A. Barbee, Point Pleasant.

Tennessee Secretary's Annual Report.—In Dr. T. J. Happel's annual report to the State Board of Medical Examiners, he recommends some rules for conducting examinations, which will doubtless be of interest to all examining boards. We abstract these rules briefly as follows:

1. There should be a watcher or floor walker at every examination.
2. The examiners should be in the room constantly and free from other work than that of conducting the examination.
3. Time allowances should be strictly followed.
4. No applicant should be allowed to leave the room until he has completed his examination and handed in his paper and then not be allowed to return.
5. Applicants should be seated as few as possible at each table, and no one be allowed to leave his seat during the examination.
6. Give only one set of questions to any one applicant.
7. Questions for each subject should be in separate sealed packages to be opened in the examining room, and then only as needed.
8. No new set of questions should be given out to any applicant until all applicants have handed in the preceding set.
9. No students or other parties not connected with the examination should be allowed in the room.

The report favors the arrangement made by some states where a board of preliminary examiners must pass on the entrance credentials of prospective college students, and also recommends an amendment to the medical laws requiring graduation from a medical college having four years of seven months each, as a requirement for license, in addition to the passing of an examination. The report also calls attention to the lack of graded courses of lectures in some medical colleges, the same lectures being delivered to all classes alike. It is urged that this should never be, since first-course students can not understand medical teachings adapted to the fourth-year classes. Students should always be required to be in actual attendance at the school from the time of its opening.

Illinois May Report.—Dr. J. A. Egan, secretary of the Illinois State Board of Health, reports the written examination held at Chicago, May 23-25, 1906. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 394, of whom 373 passed and 21 failed. The following colleges were represented:

College.	PASSED. Year Grad.	Per Cent.
College of P. & S., Chicago	(1906), the grade of 75 was reached by one, 76 by three, 77 by one, 78 by eleven, 79 by twelve, 80 by nineteen, 81 by twenty, 82 by seventeen, 83 by twenty-four, 84 by seventeen, 85 by seven, 86 by four, 87 by one, 88 by five, and 89 and 93 by one each.	
Northwestern Univ. Med. School	(1906), the grades of 76, 77 and 78 were reached by one each, 79 by seven, 80 by ten, 81 by three, 82 by fifteen, 83 by ten, 84 by nine, 85 by fourteen, 86 by 6, 87 by seven, 88 by three, 89 and 90 by five each, and 93 by one.	
Rush Med. Coll.	(1905) 88; (1906), the grades of 80 and 82 were reached by one each, 83 and 84 by three each, 85 by five, 86 by four, 87 by one, 88 by four, 89 by seven, 90 by three, 91 by two, 92 by four, and 94 by one.	
Hahnemann Med. Coll., Chicago	(1906), the grade of 75 was reached by two, 77 and 78 by one each, 79 and 80 by three each, 81 and 82 by two each, 83 by four, 84 by three, 85 by one, 86 by two, and 89 by one.	
Jenner Med. Coll.	(1906), the grades of 75, 76 and 77 were reached by two each, 78 and 79 by four each, 80 by three, 81 by two, 82 by four, and 83 by two.	
Illinois Medical College	(1906), the grades of 78, 81 and 82 were reached by one each, 84 by two, 85 and 86 by one each and 87 by two.	
American Coll. of Med. and Surg., Chicago	(1906)	80, 85
American Med. Miss. Coll.,	(1905) 80, 81; (1906)	81, 81, 85
Bennett Med. Coll.	(1906)	76, 79, 81
College of Med. & Surg., Chicago	(1906)	76
Dearborn Med. Coll.	(1906)	75, 76, 78, 78, 80, 83
National Med. Univ., Chicago	(1906)	75, 84
University of Iowa	(1906)	85
Harvard Univ. Med. School	(1904)	82, 83
Washington Univ., St. Louis	(1905) 78; (1906)	85
Toledo Med. Coll.	(1906)	82, 83, 83

Eclectic Med. Inst., Cincinnati	(1906)	79, 82
University of Toronto	(1905)	85
Queen's University, Kingston, Ontario	(1906)	83
University of Strassburg, Germany	(1906)	83

FAILED.

American Coll. of Med. & Surg., Chicago	(1905)	68
College of P. & S., Chicago	(1906)	66, 67, 71, 72, 74
College of Med. & Surg., Chicago	(1906)	60, 66, 68
Hahnemann Med. Coll., Chicago	(1906)	63, 72
Hering Med. Coll	(1906)	65, 68, 70
Illinois Med. Coll	(1905)	74
Jenner Med. Coll	(1906)	53, 64, 73, 74
Northwestern Univ. Med. School	(1906)	70
Eclectic Med. Inst., Cincinnati	(1879)	63

Illinois Reciprocity Report.—Dr. J. A. Egan, secretary of the Illinois State Board of Health, sends us a report of physicians licensed through reciprocity since the beginning of the year. The following colleges were represented:

College.	Year Grad.	Reciprocity with.
George Washington University	(1905)	Maryland
Rush Medical College	(1901)	Iowa
American Med. Miss. College	(1903)	Kansas
Hahnemann Medical College, Chicago	(1905)	Iowa
College of P. and S., Chicago	(1900)	Iowa
Keokuk Med. Coll. of P. and S.	(1900), (2, 1901), (2, 1903), (1905)	Iowa
University of Iowa	(1902), (1904), (3, 1905), (2, 1906)	Iowa
Medical Coll. of Indiana	(1904)	Michigan
Medical Coll. of Indiana	(1905)	Indiana
University of Kansas	(1906)	Kansas
University of Maryland	(1893)	Maryland
University of Missouri	(1904)	Wisconsin
Creighton Med. Coll.	(1906)	Nebraska
University of Oregon	(1899)	Michigan
Laval University, Montreal	(1897)	Michigan

Missouri April and August Reports.—Dr. J. A. B. Adcock, secretary of the Missouri State Board of Health, reports the written examinations held at St. Louis, April 10-12, 1906, and Aug. 8-10, 1906. The number of subjects examined in was 12; total number of questions asked, 90; percentage required to pass, 75.

At the April examination the total number of candidates examined was 214, of whom 188 passed, including 30 non-graduates, and 91 failed, including 21 non-graduates. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Rush Med. Coll.	(1899) 82; (1904)	80
College of P. & S., Chicago	(1906)	75, 75
Northwestern Univ. Med. School	(1904)	78
University of Iowa, Homeo. Dept.	(1894)	82
University of Kansas	(1906) 75, 77, 78, 78, 79, 80, 83, 85	
University of Louisville	(1893)	75
St. Louis University (Marion-Sims-Beaumont Med. Coll.), (1905) 80, 84; (1906), the grade of 75 was reached by seventeen, 76 by four, 77 by five, 78 by seven, 79 by five, 80 and 81 by three each, 82 by one, 83 by two, and 84, 85 and 86 by one each.		
Barnes Med. Coll. (1905) 75; (1906), the grade of 75 was reached by seven, 76 by two, 77 and 78 by one, and 79 by two.		
Washington University (1905) 75, 76; (1906), the grade of 75 was reached by four, 76 by one, 77 by two, 78 by six, 79 by two, 80 by six, 81 by two, 83 by five, and 84, 85 and 86 by one each.		
American Med. Coll., St. Louis (1906), the grade of 75 was reached by three, 78 by one and 79 by two.		
College of P. & S., St. Louis (1906), the grade of 75 was reached by five, and 78 by one.		
University of Missouri (1906), the grade of 75 was reached by three, 77 and 78 by one each and 80 by two.		
Eclectic Med. Univ., Kansas City	(1906)	75, 75
University Med. Coll., Kansas City (1906), the grade of 75 was reached by five, 76 by one, 77 and 78 by two each, 79, 80, 81, 82 and 84 by one each.		
Ensworth Central Med. Coll. (1906), the grade of 75 was reached by two, 77 by one and 81 by two.		
University of Buffalo	(1899)	75
University of Budapest, Hungary*		75
University of Palermo, Italy*		76

FAILED.

University of Kansas	(1906)	65
Homeopathic Med. Coll. of Missouri	(1905)	37
St. Louis University (Marion-Sims-Beaumont Med. Coll.), (1906) the grades of 60 and 62.5 were reached by one each, 65 by three, 66 by two, 66.5 and 67 by one each, 69 and 70 by two each, and 71 by five.		
College of P. & S., St. Louis (1897) 67; (1905) 57, 61, 71; (1906) 50, 60, 61, 64, 64, 65.5, 69, 70, 71.		
Amer. Med. Coll., St. Louis	(1906)	59, 70
Barnes University (1904) 60; (1905) 64; (1906) 42.5, 63, 64, 67, 68, 69, 70, 70, 70, 70.5, 71, 71.		
Washington University	(1906)	71
University Med. Coll., Kansas City	(1906)	70
Eclectic Med. Univ., Kansas City	(1906)	56.5, 61, 63
Ensworth Central Med. Coll. (1905) 66, 67; (1906) 57, 62, 64, 67, 67.5, 70, 70, 71.		
Eclectic Med. Inst., Cincinnati	(1905)	56
Memphis Hosp. Med. Coll.	(1904) 72; (1906)	74
University of the South	(1905)	71
Wisconsin Coll. of P. & S.	(1897)	70
Imperial Poo Chy Yuen, China*		
Palermo University, Italy*		

* Year of graduation not given.

At the August examination the total number of candidates examined was 94, of whom 27 passed, including 6 non-graduates, and 67 failed, including 8 non-graduates. The following colleges were represented:

Jefferson Med. Coll.	(1899)	75
University of Pennsylvania	(1896)	75
Vanderbilt University	(1872) 75; (1906)	82
Wisconsin Coll. of P. & S.	(1897)	75
University of Athens, Greece	(1889)	75

PASSED.

College.	Year Grad.	Per Cent.
Hahnemann Med. Coll., Chicago	(1905)	75
Rush Med. Coll.	(1903)	88
University of Louisville	(1906)	76
Tufts Coll. Med. School	(1903)	77, 82
Coll. of P. & S., St. Louis	(1897) 75; (1906)	75
Barnes Med. Coll.	(1906) 75,	75, 78
Washington University	(1905) 82, 83; (1906)	75, 75
St. Louis University (Marion-Sims-Beaumont Med. Coll.)	(1906)	83

FAILED.

Hahnemann Med. Coll., Chicago	(1888)	75
Keokuk Med. Coll., Coll of P. & S.	(1906)	64, 66
University of Kansas	(1906)	56
University of Louisville	(1894)	66
Eclectic Med. Univ., Kansas City	(1906)	43, 55
Barnes Med. Coll. (1895) 72; (1906) 56, 59, 60, 65, 66, 66, 68, 71, 73, 73.		
St. Louis University (Marion Sims-Beaumont Med. Coll.), (1906) 48, 54, 59, 61, 66, 67, 67, 68, 68, 68, 69, 69, 70, 70, 70, 72, 73.		
Washington University	(1906)	64, 68, 73
Ensworth Central Med. Coll.	(1905) 64; (1906)	47, 57
Coll. of P. & S., St. Louis (1905) 37, 58; (1906) 47, 51, 59, 65, 65, 69, 70, 73.		
American Med. Coll., St. Louis	(1906)	68
University of Nashville	(1906)	58
University of the South	(1900)	68
Meharry Med. Coll.	(1905) 64; (1906) 59, 59, 68, 68	

The following questions were asked at the August examination:

ANATOMY.

1. Give description with points of ossification of (a) parietal, (b) frontal, (c) occipital, bones, and (d) femur. 2. Describe superficial and deep palmar arch, brachial artery branches and relationship. 3. Describe brachial plexus and great sciatic nerve. 4. Describe the portal circulation. 5. Name flexor muscles of hand, extensor muscles of same. 6. Describe Scarpa's triangle, popliteal space. 7. Describe (a) superior longitudinal sinus, (b) lateral sinus (c) torcular herophili. 8. Give short description of pericardium. 9. Give short description of pleura. 10. Give anatomy of kidney.

CHEMISTRY.

1. (a) Give specific gravity of albuminated urine. (b) Also two tests for albumin in the urine. 2. (a) What are the antidotes for bichlorid of mercury? (b) Treatment (chemically) of poisoning from same. 3. Give properties of nitrous oxid or "laughing gas." 4. What is the chemical composition of pancreatic juice? 5. Give chemical characteristics of hydrate of chloral?

PHYSIOLOGY.

1. Give steps in the digestion of piece of buttered bread. 2. What effect does diet have on the secretion and constituents of milk? 3. (a) Give function of thyroid body; (b) What effect does its removal have? 4. Define metabolism. 5. What are some of the important characteristics of enzymes? 6. (a) What are leucocytes? (b) Give their functions in the normal body. 7. Locate and give function of cardio-inhibitory center, and cardio-augmenter center. 8. (a) Give brief description of secretion of urine; (b) On what does the quantity secreted depend? 9. What is diaphragmatic, what costal respiration? Give examples. 10. Describe the pneumogastric nerve, and give function of same.

PATHOLOGY.

1. Discuss cell division and growth. 2. Discuss hereditary predisposition. 3. Give the pathology in contracted kidney. 4. What is a tumor? Give brief discussion of this formation. 5. Discuss (a) caseation, (b) calcification.

BACTERIOLOGY.

1. What is infection? What is immunity? Through what agencies may the body protect itself from the consequences of infection? 2. Name the common pyogenic micro-organisms and describe the microscopic appearance and the behavior of the staphylococcus pyogenes aureus in osteomyelitis. 3. What is meant by an antitoxin? What is serum therapy? Illustrate by two diseases conditions in which it is successfully employed. 4. Describe in detail Widal's test in typhoid fever and explain the principle on which it is based. 5. Give (a) The characters of the tetanus bacillus. (b) How does it induce its effects? (c) On what theory is tetanus antitoxin administered?

PRACTICE.

1. Give etiology, symptoms, and treatment in following diseases: Pyelitis. 2. Acute ascending (Landry's) paralysis. 3. pneumothorax. 4. Dilatation of the heart. 5. How would you diagnose cerebral hemorrhage? 6. Give treatment and general management in such case. 7. What are the most reliable signs of death. 8. What is meant by sympathetic disturbance? Give an example. 9. Discuss autoinfection. 10. Give symptoms and treatment of Grave's or Basedow's disease.

SURGERY.

1. Give in detail the treatment of a recent open fracture of the tibia. 2. What are the symptoms of a subglenoid dislocation of the humerus? Describe the steps in its reduction by manipulation and mention the dangers which may be connected with the reduction. 3. Given a wound of the scalp, what investigation of the wound is necessary? Describe in detail the surgical treatment. 4. What are the symptoms and what is the treatment of a gunshot wound of the kidney? 5. Give and explain the symptoms of a

strangulated inguinal hernia? 6. How would you differentiate between a fracture at the neck of the femur without impaction and a dislocation? Give Bryant's and Nélaton's lines for making the measurements. 7. Detail the clinical symptoms and the surgical treatment of an empyema. 8. What are the clinical symptoms and what is the surgical treatment of a purulent effusion into the kneejoint? 9. Describe the different avenues through which the urinary bladder in the male may be emptied surgically. 10. Give the differential diagnosis between an aneurism of the popliteal artery and an abscess in the popliteal space.

OBSTETRICS.

1. Give diagnosis, prognosis and treatment of placenta prævia. 2. Give diagnosis, prognosis and treatment of puerperal eclampsia. 3. Describe normal labor in L. O. A. presentation. Give care of mother before, during and after labor. 4. Describe asphyxia neonatorum. Give forms and treatment. 5. Give different presentations that may be met in obstetrical practice. Differentiate a foot from a hand presentation; knee from elbow. Give treatment of each. 6. What is the bag of waters? What is its function during pregnancy? During labor? 7. How would you diagnose pregnancy at the third month, fifth month, full term? 8. How diagnose hourglass contraction with retained placenta. Give treatment. 9. Define involution. Define subinvolution. Give cause and treatment of same. 10. After the fifth month how may death of fetus *in utero* be recognized? What should be done?

GYNECOLOGY.

1. What is salpingitis? Give causes, pathology and treatment. 2. When should the uterine cavity be curetted? What are the dangers to be avoided? 3. Diagnose simple from gonorrheal vaginitis. Give treatment of each. 4. Define amenorrhea, dysmenorrhea, menorrhagia and leucorrhea. Give probable cause of each. 5. What is the difference between anteversion, retroversion and prolapsus of the uterus? To what extent does each influence the pregnant uterus?

MEDICAL JURISPRUDENCE.

1. What is tyrotoxicon, and in what found? 2. What are ptomains and in what found? 3. What is insanity? 4. Give different forms of insanity. 5. Give appearance of gunshot wound, at entrance and at exit.

THERAPEUTICS.

1. Give therapeutic action of aconite. 2. Give therapeutic action of belladonna. 3. Give therapeutic action of digitalis. 4. Give therapeutic action of nux vomica. 5. Give therapeutic action of opium. 6. Give therapeutic action of veratrum. 7. Give therapeutic action of mercury. 8. Give medical treatment of measles. 9. Give medical treatment of scarlet fever. 10. Give medical treatment of diarrhea.

HYGIENE.

1. What precautions are necessary and what is length of quarantine of (a) variola, (b) scarlatina, (c) diphtheria, (d) yellow fever. 2. (a) Give composition of milk, (b) how sterilized, (c) how peptonized, (d) how modified, (e) why is it necessary to modify milk for infant feeding? 3. Give per cent. of (a) oxygen, (b) nitrogen (in air), (c) what effect has burning lamp (or gas) on atmosphere? (d) Mention deleterious substances existing in sewer gas. 4. (a) How much water per day, in ounces, should be consumed by an average adult? (b) Mention most frequent pollution of water. (c) Give test for organic matter in same. 5. (a) Give general outline for disinfection and fumigation (b) and comparative value of the following: (1) formaldehyd, (2) sulphur, (3) chlorin.

Nevada May and August Reports.—Dr. S. L. Lee, secretary of the Nevada State Board of Medical Examiners, reports that no applicants were examined at either of these meetings, but that 86 applicants were registered on presentation of satisfactory credentials. The following colleges were represented:

MAY MEETING. College.	Year Grad.
College of P. and S., San Francisco	(1898), (1900), (2, 1902), (2, 1905).
California Med. Coll.	(1903), (2, 1905)
University of California	(1898), (1902)
Cooper Med. Coll.	(1892)
Denver Homeo. Med. Coll.	(1904)
Bennett Med. Coll.	(1900)
Hahnemann Med. Coll., Chicago	(1905)
Jenner Med. Coll.	(1903), (1905)
Central Coll. of P. and S., Indianapolis	(1901)
Medical Coll. of Indiana	(1903)
Hospital Coll. of Med., Louisville	(1901)
Louisville Med. Coll.	(1905)
University of Maryland	(1905)
Baltimore Med. Coll.	(1904)
College of P. and S., Baltimore	(1903)
Saginaw Valley Med. Coll.	(1903)
University of Michigan	(1896), (1898)
College of P. and S., Minneapolis	(1886)
University Med. Coll., Kansas City, Mo.	(1904)
University of Buffalo	(1887)
Bellevue Hosp. Med. Coll.	(1899)
Long Island Coll. Hosp.	(1883)
College of P. and S., New York	(1879), (1896)
Willamette University	(1879)
Western Pennsylvania Med. Coll.	(1897), (1901)
Jefferson Med. Coll.	(1891)
Medico-Chirurgical Coll., Philadelphia	(1905)

AUGUST MEETING.	
California Med. Coll.	(1894), (1904), (5, 1906)
University of California	(1902), (1905)
College of P. and S., San Francisco	(9, 1906)
Cooper Med. Coll.	(1889), (1897), (1901), (1902), (1905), (1906)
Denver and Gross Med. Coll.	(1904), (1905)
American Med. Miss. Coll.	(1900)
Hahnemann Med. Coll., Chicago	(1901)
College of P. and S., Chicago	(1905)
Rush Med. Coll.	(1889)
College of P. and S., Kansas City, Kan.	(1901), (1904)
Tulane University	(1887)
College of P. and S., Baltimore	(1905)
Baltimore Med. Coll.	(1906)
Boston University	(1888)
Harvard Med. School	(1894)
University Med. Coll., Kansas City, Mo.	(1905)
Ensworth Med. Coll.	(1890)
Barnes Med. Coll.	(1896), (1900)
University of Nebraska	(1905)
Willamette University	(2, 1906)
Jefferson Med. Coll.	(1877)
Memphis Hosp. Med. Coll.	(1904)
Fort Worth University	(1906)

Arizona July Report.—Dr. Ancil Martin, secretary of the Board of Medical Examiners of Arizona, reports the written examination, held at Phoenix, July 2-3, 1906. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 9, all of whom passed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
University of Southern California .... (1899) 83;	(1904)	75.5
Sioux City Coll. of Med.		*91.7
Harvard Med. School	(1894)	81
University of Michigan	(1906)	83.2
Long Island Coll. Hosp.	(1905)	80.3
Cleveland Homeo. Med. Coll.	(1906)	81.9
Med. Coll. of Virginia .... (1905) 85;	(1906)	85.5

* Year of graduation not given.

New York Reciprocates with Ohio.—We learn from Dr. Howard J. Rogers, commissioner of education of New York, that reciprocal relations have been satisfactorily arranged between that state and Ohio. New York now reciprocates, therefore, on the basis of an examination, with New Jersey, Michigan and Ohio.

Nebraska Statistics for 1905.—We learn from Dr. George H. Brash, secretary of the Nebraska State Board of Health, that we failed to receive the report of one examination given by that board in 1905 and, therefore, failed to include it in the statistics published in our Educational Number, Aug. 25, 1906. The corrected statistics of Nebraska colleges, therefore, are as follows:

GRADUATES OF NEBRASKA COLLEGES EXAMINED BY STATE BOARDS OF REGISTRATION DURING 1905.

Nebraska Colleges.	Total Examined.	Pass'd	Fail'd.	Percentage Failed.	No. of States Examining.
University of Nebraska—R..	45	36	9	20.0	9
Creighton Medical Coll.—R..	41	36	5	12.2	10
Lincoln Medical College—E.	22	16	6	27.8	4

Increased Entrance Requirements.—Since the weakest part of medical education in the United States is the low requirements of preliminary education, the announced increase in entrance requirements by a number of medical colleges is decidedly encouraging. The tendency seems to point toward a preliminary requirement by the university medical schools of two years in a college of liberal arts, and toward furnishing the opportunity whereby medical students may secure the degrees of B.S. and M.D. in six years. Is it possible that eventually the fundamental branches included in the first two years of the medical course will be given entirely in universities, in the last two years for the B.S. degree, and by instructors who devote their entire time to teaching, leaving to the medical schools the remaining two (or three) years devoted to the clinical branches? Be that as it may, with the large number of colleges which offer abundant opportunities to any one who has ambition enough to secure a liberal education regardless of his financial condition, there is no longer any excuse for adhering to the present ridiculously low minimum standards of entrance requirements. In our Educational Number (Aug. 25, 1906), we mentioned nine medical schools requiring for admission one or more years in a college of liberal arts. Seven of these require two or more years. Twelve other colleges were mentioned as having announced increased requirements to become effective at a later date. To be added to this group is the Medical Department of the University of Nebraska, which intends to increase its preliminary requirements to one year in a college of arts on or before Jan. 1, 1909.

The faculties of the Medical College of Ohio, Cincinnati, and of the American Medical Missionary College, Chicago, announce that after Jan. 1, 1910, they will require in addition to a four-year high school education a preliminary year to be devoted to physics, chemistry, biology and languages.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Infantile Diarrhea.

The intestinal lesion in this condition is generally a superficial catarrhal inflammation involving the mucous membrane of the stomach, and of the small and large intestines, according to the *Practitioner*, and is brought about by putrefactive changes in the alimentary tract. Absorption of the toxic substance then takes place and produces the severe symptoms and perhaps collapse. In severe infections gross lesions may occur in the lower portion of the ileum and in the colon. The most frequent etiologic factors in the production of such diarrheas in children are as follows:

1. Errors in diet which are liable to cause acute dyspepsia.
2. Certain predisposing causes, such as irregularity in feeding of children, bad hygienic surroundings, delicate children with low resisting powers, tender age.
3. Hot weather.

The treatment of such diarrheas should be considered under two headings: 1, Prophylactic; 2, curative.

The prophylaxis, according to Holt, consists in sending infants to the country. The laity should be educated to the importance of proper rules of feeding, the dangers of overfeeding, and the importance of a proper diet for a child who has just been weaned.

The sale and transportation of milk should be placed under legal regulations. The milk of the poor should be sterilized during the summer. All bottles, spoons, nipples and teething rings should be properly sterilized.

In the treatment of a case of infantile diarrhea the first thing to be done is to correct all bad hygienic surroundings. The child's diet must be carefully restricted or food withheld entirely for a short time. Thirst must be relieved by bland fluids, given frequently and in small amounts. Water may be freely allowed unless vomiting is present. Barley water, albumin water, whey, veal and chicken broth may be substituted for milk, but they must be given in small quantities and a careful watch must be kept on the child's stools.

If vomiting persists, it is a good plan to administer copious draughts of cold water, previously boiled. This will be readily taken and may be almost immediately vomited. This will cleanse the stomach and is a fair substitute for lavage. The contents of the small intestine should then be thoroughly cleansed by the administration of castor oil, given to a child one year old in two-dram (8.00) doses. In this way the entire intestinal tract will be cleared out and, according to the author, will cause no griping, while its after-effects are soothing. Castor oil, however, can not be well borne if the stomach is in a state of irritation, as it is very liable to increase the irritation. In such instances calomel should be given in one-quarter-grain doses (.015) every hour up to six doses, or until the usual green stools appear. Intestinal antiseptics may be tried, such as salol, in one or two grain doses (.06-.12), given every two or three hours, or resorcin in one-grain (.06) doses every two or three hours, but both are liable to cause some irritation of the infant's stomach and cause the vomiting to recur.

In severe cases, stimulants such as brandy, may be required. A child one year of age may take an ounce of brandy in the twenty-four hours. It should always be well diluted with water, eight or ten parts, and given in small quantities at frequent intervals. This may be followed by a saline purge such as tartarized soda, magnesium sulphate or magnesium citrate. The following combination is of value:

℞.	Magnesii carb.	gr. iii	20
	Magnesii sulph.	gr. x	65
	Spts. chloroformi.	m. iii	20
	Aquæ menth. pip. q. s. ad.	f℥i	4
M.	Fiat mistura. Sig.: To be taken at one dose. Or:		
℞.	Tinct. rhei.	m. vii	50
	Magnesii sulph.	gr. vi	40
	Syr. zingiberis.	m. v	30
	Aquæ fœniculi q. s. ad.	f℥i	4
M.	Fiat mistura. Sig.: At one dose.		

If fresh signs or symptoms of intoxication arise, such as may be indicated by a rise of temperature and a rapid pulse with great prostration, the foregoing treatment must be repeated. According to Holt, irrigation of the bowels is advisable in all cases, as it hastens the effect of the cathartic and assists in removing the offensive contents which accumulate in the lower bowel. A long rectal tube should be used and a normal saline solution should be injected into the bowel at a temperature of 100 F.

If the stomach is irritable, champagne is preferable for older children and must be similarly administered, but in small amounts.

Mercury in Syphilis.

Corrosive sublimate, according to Stevens in his "Therapeutics," is a reliable salt of mercury, though somewhat more irritant than the protiodid. He recommends its administered in the pill form or in solution, given in doses of grain 1/20 each (.003) and gradually increased to grain 1/12 (.005) three times a day after food. He state that the addition of a small amount of opium usually serves to allay any gastric or intestinal irritation. Late in the secondary stage it may be combined with potassium iodid as follows:

℞.	Hydrargyri chloridi corros.	gr. iss-ii	.09-.12
	Potassii iodidi	3iv-vi	15-25
	Syr. sarsap. co.	f℥iss	45
	Aquæ q. s. ad.	f℥iii	90
M.	Sig.: One teaspoonful in water after meals.		

Hypodermically the corrosive sublimate is one of the best preparations of mercury to employ. Sodium chlorid should be added to the solution, according to Stevens, to prevent the formation in the tissues of an insoluble albuminate. They may be combined as follows:

℞.	Hydrarg. chloridi corros.	gr. vi	40
	Sodii chloridi.	gr. xl	2.65
	Aquæ dest.	f℥i	30
M.	Sig.: From 10 to 20 minims to be injected once daily into the tissues.		

[The best location for injection is deep into the muscles of the gluteal region, selecting a new site for each injection.—ED.]

Other combinations of mercury to be used in the treatment of syphilis are recommended by the "Cyclopedia of Medicine and Surgery" as follows:

℞.	Hydrarg. chloridi corros.	gr. ii	.12
	Pulv. opii.	gr. vi	.50
	Ext. guaiaci.	3ss	2
M.	Fiant pillulæ No. xxiv. Sig.: One pill three times a day. Or:		
℞.	Hydrarg. bichloridi.	gr. i	.06
	Tinct. rhei		
	Tinct. cinchonæ, āā.	℥i	30
M.	Sig.: One teaspoonful twice a day. Or:		
℞.	Hydrarg. biniodidi.	gr. i	.06
	Potassii iodidi	℥ii	8
	Aquæ menth. pip. q. s. ad.	f℥iii	90
M.	Sig.: One teaspoonful after each meal.		

Acute Pharyngitis.

In the treatment of acute pharyngitis the same authority recommends that the patient be put to bed and an initial dose of calomel grain 1/6 (.01) given every hour for six or eight doses, followed by a saline purge. A hot mustard footbath is also recommended.

The following combination is advised internally:

℞.	Tinct. aconiti.	m. xv	1
	Sol. potassii citratis.	f℥ii	60
	Elix. aromatici	f℥iv	25
	Aquæ camphoræ q. s. ad.	f℥iv	120
M.	Sig.: One tablespoonful every three hours.		

If much edema be present the following combination is of value:

℞ Tinct. opii .....f℥i 4|
Tinct. belladonnæ.....m. xv 1|
Aquæ camphoræ q. s. ad.....f℥iv 120|

M. Sig.: One tablespoonful every three or four hours.

If there is a rheumatic tendency, sodium salicylate should be given in 10 (.65) grain doses, as necessary.

Locally small pieces of ice may be taken into the mouth every two or three hours and the following combination applied locally:

℞ Mentholis .....gr. vi |40
Olei amygdalæ .....f℥ii 8|

M. Sig.: Apply locally on a swab every three hours.

Gonorrhea.

Robinson, in *Amer. Jour. Clinical Medicine*, recommends the following combinations as astringent injections after the disappearance of the gonococci, in the treatment of gonorrhea:

℞ Zinci sulphatis.....gr. viii |50
Aquæ dest. .....f℥iv 120|

M. Fiat solutio. Sig.: Use as an injection four times daily. Or:

℞ Zinci sulphatis.....gr. viii |50
Plumbi acetatis.....gr. viii |50
Aquæ dest. .....f℥iv 120|

M. Sig.: Use as an injection three or four times a day.

The following combination is recommended by Potter as an injection after the acute symptoms have subsided:

℞ Zinci sulphatis.....gr. viii |50
Plumbi acetatis.....gr. x |65
Ammonii chloridi.....gr. x |65
Aluminis .....gr. x |65
Aquæ rosæ .....f℥iv 120|

M. Sig.: Use as an injection. Or:

℞ Resorcinol .....ʒss 2|
Acidi borici.....gr. xx 1|30
Zinci sulphatis.....gr. x |65
Aquæ dest. .....f℥iv 120|

M. Sig.: Use as an injection three times a day. Or:

℞ Zinci sulphatis |
Plumbi acetatis, āā.....gr. viii |50
Tincturæ opii .....f℥i 4|
Tinct. catechu .....f℥ii 8|
Aquæ dest. q. s. ad.....f℥iv 120|

M. Sig.: Use as an injection three times a day. Or:

℞ Zinci sulphatis.....gr. iv-viii |25-.50
Bismuthi subcarb. .....ʒiii 12|
Bismuthi subgal. .....ʒi 4|
Sol. hydrastis aq.....f℥i 30|
Pulv. acaciæ.....ʒiss 6|
Aquæ dest. q. s. ad.....f℥iv 120|

M. Sig.: Shake well before using and inject three times a day.

Medicolegal

Validity of Law Authorizing Revocation of Certificate for Advertising Relative to Venereal Diseases.

The Supreme Court of Michigan had before it in the case of Kennedy vs. the State Board of Registration in Medicine the question of the constitutionality of the state law authorizing the board to revoke a physician's certificate for the insertion in a newspaper of an advertisement relative to venereal diseases. Subdivision 6 of section 3 of No. 237 of the Public Acts of Michigan of 1899, as amended in 1903, provides: "The board of registration in medicine shall refuse to issue a certificate of registration provided for in this section to any person guilty of grossly unprofessional and dishonest conduct of a character likely to deceive the public, and said board shall, after due notice and hearing, revoke a certificate issued subsequent to the date of the passage of this act, or subsequent to the date of the passage of Act. No. 237 of the Public Acts of 1899, for like cause or for offenses involving moral turpitude. . . . And provided further, after the passage of this act, the board may at its discretion revoke the certificate of registration, after due notice and hearing of any registered practitioner who inserts any advertisement in any newspaper, pamphlet, circular, or other written or printed paper, relative to venereal diseases or other matter of any obscene or offensive nature derogatory to good morals."

The court says that in support of his contention that this section was unconstitutional, the complainant cited several cases. Matthews vs. Murphy (Ky.), 63 S. W. Rep. 785; ex-parte McNulty, 77 Cal. 164; Hewitt vs. the Board of Medical Examiners (Cal. Sup.), 84 Pac. Rep. 39. The strongest and best reasoned of these cases was Matthews vs. Murphy. That case alone would receive consideration because the grounds on which it was held inapplicable made all the others inapplicable. In that case it was held that a statute giving the State Board of Health authority to revoke a certificate to practice medicine on proof that the holder was guilty of "grossly unprofessional conduct of a character likely to deceive or defraud the public" was unconstitutional on the ground that the statute did not advise the physician "in advance what act or acts may be in violation of its provisions. . . . He might do an act which he regarded as entirely proper, which neither violated moral law nor involved turpitude, still such acts might, in the opinion of the State Board of Health, amount to unprofessional conduct, and which in its opinion did or was calculated to deceive or defraud the public. . . . The legislature in effect has attempted to commit to the State Board of Health the right, after the physician has done some act, to determine what its effect is to be, and, if in its judgment he should be deprived of the right to practice his profession, it can inflict the punishment on him by revoking his license." This reasoning presented no argument for declaring unconstitutional that part of subdivision 6, under which the defendants were proceeding to try the complainant, viz., that giving them authority to revoke his certificate because he inserted an advertisement in a newspaper relative to venereal diseases. Indeed, in deciding Matthews vs. Murphy, the court recognizes the constitutionality of such a law. This is shown by the following quotation from its opinion, viz: "If the legislature desires to declare for what acts or conduct a physician's license to practice medicine shall be revoked it is competent to do so, and to vest in some tribunal authority to investigate and try the charge which may be made under such a statute." What the Supreme Court of Michigan would have decided had the constitutionality of the first part of subdivision 6 been necessary to be decided it does not intimate, unless such intimation may be found in the above remarks.

But, further, as to the law which authorized the defendants to revoke the complainant's certificate on the ground that he inserted an advertisement relative to venereal diseases in a newspaper, the court says that it might fairly be stated that all of the many reasons which he advanced in support of the contention that it was unconstitutional rested on the assumption that the revocation of that certificate was an exercise of judicial power, and that all of his objections to the constitutionality of the law were completely answered by saying that this assumption was unfounded. This was shown so clearly by the opinion of the Supreme Court of Minnesota in State vs. Board of Medical Examiners, 34 Minn. 389, that the argument in that opinion is made a part of this. And this doctrine is supported by other authorities. See Meffert vs. State Board of Medical Registration, 66 Kan. 710; State vs. Webster, 150 Ind. 607; Dent vs. West Virginia, 129 U. S. 114, and, so far as the court has been able to discover, there is no authority against it.

Nor does the court consider that the statute in question violates the rule that a statute can not deprive one of the right to seek redress in a court for the invasion of a constitutional right. It says that if this statute is observed no one will be deprived of a constitutional right, and in that case a provision for an appeal to a court is not essential. If through non-observance of the statute the complainant or any other physician is deprived of a constitutional right, there is nothing therein which prevents his obtaining adequate redress in a court.

Mental Infirmity Not Proved by Tendency to It.

The Court of Appeals of Maryland says, in the will case of Horner vs. Buckingham, that evidence that a person has a disease which may or must eventuate in mental disease can not prove, or standing alone tend to prove, that at a given point of time he is actually so afflicted. The tendency to mental infirmity can not *per se* prove the infirmity. It must be shown by facts. If a person has always shown through many years a high degree of mental soundness, in fact through his entire life, a jury ought not to be permitted to pronounce him insane, merely because a medical expert can be found who will testify that he is affected with a disease that may eventually produce insanity, without other facts being shown that tend to prove that his speech or conduct is such as reasonably warrants the conclusion that such point has actually been reached.

Right of Executors to Allow Physician's Bill.

The Second Appellate Division of the Supreme Court of New York holds, in re Title Guaranty and Trust Company and others, where there was an estate consisting of several millions of dollars' worth of real and personal property and a physician's bill amounting to $4,000, that it was error in the surrogate to cut the bill in two. It says that the physician who treated the testator in his last illness devoted his entire time to that labor, and testified that the amount which he charged for his services was fair and reasonable. The executors paid him in that belief, and there was no reason whatever to believe but that in doing so they considered that they were acting in the best interests of the estate. Nor was anything to be found in the record to indicate that, had the bill been rejected and a lawsuit followed, the estate would have been any better off financially. The question was not whether the services of the physician should have been rendered for less. It was whether the executors exercised their honest judgment in believing it to be a proper claim and in paying it. Even if they erred in judgment, that fact alone would not make them personally liable.

Intent and Requirements as to Physical Examinations.

The Appellate Division, Second Department, of the Supreme Court of New York says, in the personal injury case of Goldenberg vs. Zirinsky, brought by a non-resident, that while it entertains no doubt of the power of the court to compel the plaintiff to submit to a physical examination under the terms prescribed in the Code of Civil Procedure, this is an encroachment on the common law rights of litigants, and it should not be extended beyond the exact limits fixed by the statute, and all of its requirements should be observed. There is no inherent power in the court to direct a physical examination. The power is derived wholly from the statute, and as the purpose of the examination is that the evidence may be taken by physicians or surgeons designated by the court and made available for either or both parties to the action, it is entirely reasonable that the order should be served on the party who is called on to act. The court never acquired any jurisdiction by an order served on the plaintiff's attorney.

Furthermore, the court says that the order in question in permitting the defendant to have his own medical adviser present, even though a like privilege was accorded the plaintiff, was enlarging the scope of the statute. It was not intended that such physical examination should be accorded to an adverse party for the purpose of enabling him to discover the weak points and to ignore the strong ones. The intent was to have an examination by physicians or surgeons designated by the court, owing no obligations to the parties; the evidence so brought ought to be available to either party. The defendant, by demanding a physical examination, under the fair intent of the statute, takes the risk of producing evidence which will be detrimental to him through the discoveries of disinterested witnesses, and the provisions of section 873 of the Code of Civil Procedure that "such examination shall be had and made under such restrictions and directions as to the court or judge shall seem proper," does not authorize the admission to such examination of the physicians of one or both of the parties.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

October 13.

1 *Bath Treatment of Typhoid Fever in Private Practice. S. Baruch, New York.
2 *Pathogenesis and Therapeutics of Cancer. R. Bell, London, England.
3 *Operative Treatment of Acute Gonorrheal Epididymitis. F. R. Hagner, Washington, D. C.
4 Effects of Absinthe. E. E. Walker, New York.
5 *Roentgenography of the Stomach. M. Einhorn and L. G. Cole, New York.
6 *Three Cases of Pott's Disease and one Case of Coxalgia Occurring in Adults and Presenting Unique Features. J. T. Rugh, Philadelphia.

1. **Bath Treatment of Typhoid in Private Practice.**—Baruch declares that in the management of a case of typhoid fever the chief aim of the physician should be the enhancement of the patient's resisting capacity to the toxemia which threatens his life. The damage sustained by the nerve centers is the measure by which the mildness or severity of a case of typhoid fever is gauged. Cold baths must not be regarded as cooling procedures. Cold baths prevent lethal complications by reason of their sustaining effects on the central nervous and circulatory systems. The form of the bath and its temperature must be adapted to the condition of the patient.

2. **Pathogenesis and Therapeutics of Cancer.**—Bell believes that cancer is a disease independent of any specific agent from without. From his point of view, if a person is a gross feeder, especially if he indulges in an excessive amount of animal food, and if there is present a constipated habit which has a pernicious effect on the thyroid gland, it may be concluded that there exist the three most important factors whose combined influence is sufficient to provoke a tendency to cancer.

3. **Operative Treatment of Acute Gonorrheal Epididymitis.**—Hagner has had excellent results with the open method of treating gonorrheal epididymitis. It is a rational procedure. The danger to the patient is slight. The infiltration of the epididymis disappears more rapidly under the operative treatment than under any other. The danger of permanent injury to the testicle and epididymis is lessened. The patients are absolutely relieved of pain on recovery from the anesthetic. The systemic symptoms are promptly relieved.

5. **Roentgenography of Stomach.**—Einhorn and Cole have examined a considerable number of patients with the *x*-rays and are convinced that this method is an excellent one. When the stomach is entirely or partly empty, the patient is given a pint of milk into which one ounce of subnitrate of bismuth has been suspended by thorough mixing. The patient is then at once skiagraphed in a standing or recumbent posture. The time of exposure is usually ten or fifteen seconds. An investigation of the colon, by exposing the patient to the rays a second time on the day following, may be made. By this proceeding no instrument is introduced into the stomach.

6. **Pott's Disease and Coxalgia.**—The interesting features of the first case cited by Rugh are the development of a primary tuberculosis of the spine in a woman 70 years old, with no apparent causative history, and the early and rapid onset of paralytic symptoms even before the appearance of the knuckle in the spine. The second patient is a man 50 years old. The primary focus of disease was in the testicle, while there was secondary infection of the spine and kidney. The third patient is a man 37 years old. The onset of the disease was extremely slow in spite of heavy work constantly performed, and in the absence of all mechanical treatment. The case of coxalgia reported illustrates the impossibility of pronouncing a case of tuberculosis cured.

New York Medical Journal.

October. 13.

7 *Reciprocity in Medical License. R. A. Vander Veer, Albany, N. Y.
8 Advances in the Surgery of the Nervous System Considered from the Standpoint of the Neurologist. T. H. Weisenburg, Philadelphia.

9 Recent Advances in Laryngology and Rhinology. C. H. Knight, New York.
10 Local Anesthesia in the Operative Treatment of Anorectal Diseases. S. G. Gant, New York.
11 *Preliminary Report on the Use of X-rays in Neuritis. J. H. Comroe, York, Pa.
12 Medical Complications and Treatment of Pneumonia. A. C. Morgan, Philadelphia.
13 *Hydrotherapeutic Treatment of Chronic Rheumatism. J. J. Levy, Syracuse, N. Y.
14 Urethral Diverticula and Cul-de-sacs. N. E. Aronstamm, Detroit.

7. **Reciprocity in Licensure.**—Vander Veer describes the methods employed by the New York Board of Regents for establishing reciprocity in medical licensure.

11. **X-Rays in Neuritis.**—Comroe has employed the *x*-rays in selected cases of neuritis in which the cause has been removed either partially or wholly and which thereafter resisted all modes of hygienic, therapeutic, dietetic and hydrotherapeutic treatments. Six cases are reported. Comroe insists that: 1. The *x*-ray should be employed in the treatment of neuritis only after all other judicious methods of therapy have failed. 2. The exposure should be directed over as wide an area as may be safe, and frequently repeated in the beginning. 3. The strength of the current and duration of the exposures should, as a rule, be in direct ratio to the approximate distance of the affected nerve structures from the cutaneous surface overlying them. Idiosyncrasies must be carefully sought. 4. Relief, if obtained, usually makes its appearance early in the treatment. 5. Obstinate cases should receive "tonic" treatment with a medium tube for some time after the patient has been apparently cured so as to further assure permanency.

13. **Hydrotherapeutic Treatment of Chronic Rheumatism.**—The treatment employed by Levy may be summed up as follows: The patient is given an electric light bath, temperature 150 F., duration 20 minutes, to be followed by a circular douche 90 F., duration one minute; this is followed by a Scotch douche to the affected joints, and this in turn is followed by a general massage with special attention to the affected joints or muscles. Three treatments a week are usually sufficient for these cases.

Boston Medical and Surgical Journal.

October 11.

15 *Acute and Chronic Indigestion. J. B. Deaver, Boston.
16 *Observations in One Thousand Adenoid Operations. F. B. Sprague, Providence, R. I.
17 Killian's Operations. H. P. Mosher, Boston.
18 Hysteria from the Point of View of Dissociated Personality. M. Prince, Boston.

15. **Acute and Chronic Indigestion.**—Deaver states that most cases of acute dyspepsia are undeniably medical. Most cases of chronic dyspepsia can now be relieved by surgical means. Therefore, a correct diagnosis is the essential prerequisite to successful treatment. Careful physical examination of the abdomen and other regions of the body, and a reliable history of the patient, are of much more value than chemical examination.

16. **One Thousand Adenoid Operations.**—These 1,000 cases reported by Sprague were about equally divided among the two sexes, there being 503 male and 497 female. The age limit ranged from six months to 37 years. The largest number at any one age was 64 patients at 8 years of age. Dividing the age limit into periods of seven years each, about 30 per cent. were during the first seven years; 50 per cent. during the second seven years, and 20 per cent. during the third period of seven years; there being only 28 patients over 21 years of age; 13 of these being over 30 years old. In 905 cases, or about 90 per cent., the adenoids were associated with hypertrophy of the faucial tonsil, some with but a slight degree of hypertrophy, and others enormously enlarged. In these cases there was also more or less hypertrophy of the whole pharyngeal lymphoid ring. The remaining 95 patients had the hyperplasia of the nasopharyngeal adenoids alone. Investigation as to the cause of the trouble did not lead to very satisfactory results. Five cases were dated to attacks of diphtheria, five to whooping-cough, seven to measles, five to scarlet fever, one to mumps, and while the diseases of childhood undoubtedly help in the causation of this hyperplastic lymphoid condition, the data are so incomplete and negative, and so many children have enormous growths who never had any of the exanthemata that their importance in the etiology of the growth is not great. All but two patients of this series were operated on under ether anesthesia. A few anesthetics were started with nitrous oxid gas. On the whole, Sprague thinks that clear ether is better, as the adenoid patients always require more ether than others, and it is necessary to have the system saturated with it before beginning the operation. Sprague was called on to operate the second time in only two instances. He describes his technic in detail.

St. Louis Medical Review.

October 6.

19 Résumé of Pathologic Physiology of the Abdominal Visceral Tracts. B. Robinson, Chicago.
20 Acute Autointoxication from Fecal Stasis. W. F. Waugh, Chicago.

October 13.

21 Uncinariasis (Hook-worm Disease); Its Relation to Grave Anemia. L. M. Warfield, St. Louis.

Lancet-Clinic, Cincinnati.

October 13.

22 The Rôle of Heredity in Reducing Degeneracy in Man to the Minimum. R. C. S. Reed, Stockton, Ohio.

American Journal of Medical Sciences, Philadelphia.

September.

23 Toxemic Vomiting of Pregnancy. J. W. Williams, Baltimore.
24 *Elephantiasis Nervorum of the Scalp; A Manifestation of von Recklinghausen's Disease. H. F. Helmholz, and H. Cushing, Baltimore.
25 *Graphic Methods in the Study of Cardiac Diseases. A. D. Hirschfelder, Baltimore.
26 *Insufficiency of the Tricuspid Valve in the Course of Pernicious Anemia. R. B. Preble, Chicago.
27 *Elephantiasis Non-parsitica, Secondary to Chronic Cardiac Disease and Repeated Edema of Pregnancy. T. W. Hastings, New York.
28 *Results of the Biterminal Transplantation of Veins. A. Carrel, and C. C. Guthrie, Chicago.
29 *Essential Pentosuria in Two Brothers. T. C. Janeway, New York.
30 *Value of Massive Doses of the Salicylates in the Diagnosis and Treatment of Acute Articular Rheumatism. T. W. Clarke, Cleveland, Ohio.
31 *A New Blood Filaria of Man; Filaria Philippines. P. M. Ashburn, and C. F. Craig, Manila, P. I.
32 *Splenomedullary Pseudoleukemia, with Secondary Myelophthisic Anemia. C. E. Simon, Baltimore.
33 *Infections of the Biliary Tract, with Special Reference to Latent (or masked) and Typhoid Infections. A. O. J. Kelly, Philadelphia.

24. **Elephantiasis Nervorum of Scalp.**—The patient whose condition Helmholz and Cushing record presented, in addition to many of the commoner features of von Recklinghausen's disease, a relatively unusual type of diffuse superficial tumor formation on the left side of the head, a site at which there had been present for several years previously a large brown spot. Twelve years ago the patient was struck by a horse's hoof on the left side of his head, the scalp being severely bruised. About a year after the injury the present tumor began to develop. The tumor was in the form of a drooping or sagging of the scalp, which progressed so rapidly that in four years' time the scalp covered part of the left cheek, and the ear stood out at right angles from the head and was considerably lower than the right ear. There were no subjective symptoms. The tumor was readily movable. On palpation it felt like a relaxed and emaciated mamma. A flap of the scalp large enough to restore the symmetry of the patient's head was removed. The thickening of the scalp was found to be due almost entirely to edematous connective tissue which after hardening in formalin was quite tough and could be pulled off readily in sheets and sometimes also in small cords that resembled nerve fibers. The authors give a full report of the pathology of this affection and review the literature on the subject.

25. **Study of Cardiac Diseases.**—Hirschfelder's paper is illustrated with diagrams showing the various points brought out. It would be impossible to do justice to the article in an abstract without reproducing the illustrations.

26. **Insufficiency of Tricuspid Valve During Pernicious Anemia.**—Preble reports four cases, occurring in two women and two men, aged 70, 53, 40 and 40 years respectively. Each case was accompanied by a positive, systolic centrifugal pulse in the external jugular veins. The two women died. In none of the cases was there any cyanosis, dyspnea, passive congestion of the liver, or edema of the legs or body cavity. While all the

cases showed some enlargement of the heart, in no instance did it compare in degree with that seen in the commoner instances of tricuspid insufficiency.

27. **Elephantiasis Non-Parasitica.**—Hastings is of the opinion that a chronic cardiac disease and some local lymphatic deficiency in the right leg were the etiologic factors in his case, which occurred in a woman 28 years of age. With each of four pregnancies there had been moderate bilateral edema of the legs. Following the death of her husband the patient began to work as a silk-winder, an occupation which necessitated constant walking to and fro. Within two years the right ankle began to swell during the day, the swelling subsiding at night, and gradually over a period of one and a half years the leg below the knee became much involved. For four years the permanent swelling has been increasing slowly. There has been no urinary disturbance and the urine has never been milky. Aside from bandages properly applied, rest with elevation of the limb, when possible, and massage, the treatment has been directed to the cardiac disease.

28. **Biterminal Transplantation of Limbs.**—As the result of further experiments, Carrel and Guthrie conclude that a venous segment interposed between the cut ends of an artery quickly undergoes anatomic change, assuming the character of an artery and performing the arterial functions.

29. **Essential Pentosuria.**—The two cases reported by Janeway are a reproduction of those already on record in that they show the usual clinical history.

30. **Massive Doses of Salicylates in Rheumatism.**—Clarke discusses the effects of large doses of salicylates, as high as 20 grains hourly, in the treatment of acute articular rheumatism. The method of treatment employed by him consisted of giving sodium salicylate every hour, if the patient was awake, in doses varying from 10 to 20 grains, until the toxic symptoms appeared. The salicylate was then stopped, to be resumed when the symptoms disappeared, and then given in doses of 10 or 20 grains every two to four hours, stopping again with each recurrence of toxic symptoms. The amount of salicylate required to produce symptoms of its full effect has varied from 75 to 360 grains, the average in a series of 74 cases being 200 grains. Clarke says that these massive doses are borne well, as a rule, without nausea, vomiting or depression. The effect of this sudden saturation with the drug is a very rapid fall of the temperature to normal. The relief obtained is most striking. The swelling subsides rapidly, sometimes before the pain, and sometimes persists in a mild degree for a day or two longer. Cardiac complications, instead of being increased in frequency by this method of treatment, seem to be lessened. Clarke urges that the toxic symptoms must be watched for carefully, the drug being stopped immediately on their appearance.

31. **Filaria Philippinensis.**—*Filaria philippinensis* is a small sheathed filaria found by Ashburn and Craig in the blood of a Visayan prisoner in Bilibid prison, Manila, at all hours of the day and night, but always in small numbers. At the time of their observations is seemed rather more numerous at night, though even then it was, at times, hard to find. The greatest number found in one slide was seven. Once they examined 17 spreads and found but one parasite. This was one day at noon. On another occasion a slide taken at noon showed five organisms. They are of the opinion that this filaria represents a new species for the reasons given in the detailed description of the worm, because of its lack of periodicity, and because of the rarity of filariasis in the Philippine Islands, where all the conditions would seem favorable to the rapid spread of infection were the parsite one of any of the previously known varieties.

32. **Splenomedullary Pseudoleukemia and Myelophthisic Anemia.**—Simon makes this diagnosis as furnishing the most probable explanation of the clinical findings in the case reported by him, that of a man 79 years of age. There was no enlargement of lymph glands and there was practical absence of any clinical symptoms. Examination of the blood shewed a very interesting condition. The red cells numbered 2,195,000; the hemoglobin was 25 per cent.; the color index was 0.58. While there was a certain amount of variation in size and form of the red cells, there was no manifest tendency to macrytosis or oval form; true poikilocytes were not numerous. The cells were pale and showed no evidence of polychromasia, while granule cells were present in fair numbers. Nucleated red cells were not found. The leucocytes numbered 22,000. The differential count showed: lymphocytes, 92.6 per cent. (of which 2 per cent. large lymphocytes); large mononuclears, 1.6 per cent.; polynuclear neutrophiles, 5.6 per cent.; mast cells, 0.6 per cent.

33. **Infections of Biliary Tract.**—Kelly's observations are based on a statistical study of the clinical and other phenomena of 216 patients operated on by one surgeon during the last six years. Kelly's personal work comprised a study of the gall bladders removed by this surgeon; of the pathologic lesions at the necropsy in some of the fatal cases, and in other cases in which operation was not done; of the pathologic lesions at the operation on some of the patients, and a bacteriologic study begun at the time of operation in 70 of the cases, and at the necropsy in a few of the fatal cases. The length of this article precludes abstracting it.

Journal of Nervous and Mental Disease, New York.

October.

34 *Subdivision of the Representation of Cutaneous and Muscular Sensibility and of Stereognosis in the Cerebral Cortex. C. K. Mills, and T. H. Weisenburg, Philadelphia.

35 *Ear Affections and Mental Disturbances. E. Amberg, Detroit, Mich.

34. **Cutaneous Muscular Sensibility and Stereognosis.**—The main object of Mills and Weisenburg's paper is to present the following propositions: 1. That the cortical representation of cutaneous and muscular sensibility is independent of motor representation, that it surrounds the motor zone, and that it is subdivided into a mosaic of centers, each center or group of centers being anatomically and functionally correlated to a motor center or centers. 2. That every muscle or group of muscles producing a movement or movements which are represented by separate centers in the cortex, is topographically related to a segment of the skin, which has also a definite cortical center, this center correlated anatomically and functionally with the motor center. 3. That stereognostic representation like that of cutaneous and muscular sensibility and of movements, has also its independent cortical area and is subdivided after the manner of the motor and sensory area. Four cases in point are cited.

35. **Ear Affections and Mental Disturbances.**—According to Amberg, the ear participates in the production of mental disturbances, directly and indirectly. As an organ of sense, its functional disturbance may disharmonize the normal state of thinking. The mental disturbance can be brought about in two ways: First, by causing hallucinations, respectively, illusions, the influence of which is more or less strong, according to the predisposition of the afflicted individual. Entirely different from these disturbances are those in which the ear and its surrounding parts are simply the place in which a toxemia is primarily created, or in which an abscess engaged the vitality of the body. Both conditions, while entirely different from each other clinically and pathologically, can produce mental disturbances and aggravate pre-existing mentaly abnormal conditions.

Amberg thinks it very probable that also without a predisposition a mental disturbance can be created if, for example, the annoying subjective noises create a state of exhaustion, e. g., neurasthenia. These conditions are of great import from a forensic point of view and must be considered in declaration of witnesses. Physicians are confronted with the important question whether the consent to an operation is required of an adult patient whose mental activity is temporarily interfered with and who is unable to judge about his condition, also if the consent of the relatives is necessary in such a case. Amberg believes that the ears of inmates of insane asylums should be examined, and that patients suffering from mental disturbances who exhibit phenomena on the part of the organ of hearing should be examined not only for pathologic conditions of the ear, but also of other organs, such as the kidneys, on account of the fact that the disturbance in the ear, although

in itself a new center, may only be a reflex disturbance. The benefit of surgical interference in ear affections should be bestowed on the insane in need of it.

Texas State Journal of Medicine, Fort Worth.

October.

36 *Empyema of the Gall Bladder. H. M. Doolittle, Dallas.
37 *Abscess of Temporo-Sphenoidal Lobe. J. Mullen, Houston.
38 Paresis. J. S. Turner, Terrell.
39 *Case of Acute Mastoiditis Complicated by Ulceration and Rupture of the Esophagus. J. O. McReynolds, Dallas.
40 Conservatism in Operative Gynecology. W. L. Brown, El Paso.
41 Cinders in the Eye. R. H. T. Mann, Texarkana.
42 *Gunshot Wounds of the Abdomen. J. H. Smart, Dallas.

36. **Empyema of Gall Bladder.**—Doolittle discusses the clinical history of this affection and reports one case which illustrates some of the most important points of the diagnosis and technic.

37. **Abscess of Temporosphenoidal Lobe.**—Mullen reports a case in which a Schwartz-Stacke operation was performed successfully. Owing to the age of the patient, 7 years, and his extreme restlessness it was necessary to make the daily dressings under chloroform anesthesia. The patient was in the hospital 43 days and during this time he was chloroformed 42 times. The diagnosis in this case was rendered more than ordinarily difficult by the entire absence of local symptoms. Another interesting feature of the case was the intense leucocytes and its gradual decrease as drainage improved and the amount of pus decreased.

39. **Acute Mastoiditis Complicated by Ulceration of Esophagus.**—In the case reported by McReynolds there existed a perfectly plain acute mastoiditis which followed a subacute involvement of the mastoid antrum and middle ear cavity. The patient was operated on but shortly afterward went into a condition of extreme shock, during which he died. At the postmortem examination it was found that death was due to a complete rupture, three inches in length, in the lower third of the esophagus supervening on an extensive ulceration of the walls of the esophagus with a resulting profuse and fatal hemorrhage. No unusual strain had been placed on the esophagus on the morning of the rupture; in fact, the patient had eaten practically no food for about one week.

42. **Gunshot Wounds of Abdomen.**—Smart is of the opinion that the proper procedure in cases of abdominal gunshot wounds is to get the patient speedily to a hospital and to explore promptly for injuries and to repair them when found. He reports five cases, with three recoveries. One death was caused by shock, and the other by peritonitis.

Journal Missouri State Medical Association, St. Louis.

October.

43 *Pyuria. E. G. Mark, Kansas City, Mo.
44 Use and Abuse of the Obstetrical Forcep. A. L. Gray, St. Joseph, Mo.
45 Gastric Neuroses. V. A. Bles, St. Louis.
46 Criminal Abortion; A Prevailing Evil Against the Unborn Generation; A National Crime Committed for Mere Social Promotion. T. F. Lockwood, Butler, Mo.
47 *Best Time to Give Quinin. R. L. Johnson, Rolla, Mo.
48 Suppuration of Maxillary Sinus with Involvement of Ethmoidal Cells and Sphenoidal Sinuses. H. J. Jurgens, Edina, Mo.
49 Value of Jaundice as a Diagnostic Factor in Disease of the Billiary Passages. J. Q. Chambers, Kansas City.

43. **Pyuria.**—Mark discusses the chronic form of pyuria arising from suppurative processes in the urogenital tract in which pus in the urine is the most persistent and tangible symptom. He considers the catheterizing cystoscope the most valuable apparatus for segregating the urine.

47. **Best Time to Give Quinin.**—According to Johnson, the best time to give quinin in malaria is immediately on the commencement of the sweating stage, to promote its remedial absorption and its prompt elimination. He gives the drug in one dose of from 15 to 25 grains.

Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis.

October 1.

50 Cardiospasm. H. S. Plummer, Rochester, Minn.
51 Notes on Ocular Syphilis. E. S. Strout, Minneapolis.
52 Calorimetric Principle in Infant-Feeding. J. P. Sedgwick, Minneapolis.
53 *The Business Problem of the General Practitioner. C. Johnson, Willmar, Minn.
54 Gastroenteritis. H. Hughes, Mankato, Minn.

53. **Business Problem of General Practitioner.**—Johnson says that from a high idealistic standpoint the medical profession is regarded as a charitable organization which should be forgetful of self and ever devoted to the service of others irrespective of hope or expectation of reward. As a matter of fact, medicine, as a business vocation, does not compare favorably with other vocations for return on investment and energy extended. Physicians have not paid enough attention, he says, to the business aspect of their profession; hence, their incomes are ridiculously small, although, because of the boasting habits of physicians, they are believed to have much larger incomes than they do have. So many factors are operating to reduce the physician's income that this matter ought to be discussed fully at every medical meeting. Johnson believes that in thorough organization of the profession lies salvation. If the county, state and national societies will stand behind every member whenever and wherever he is assailed in his rights and in his pocketbook, then there will be a thoroughly organized and prosperous medical profession.

Bulletin of the Johns Hopkins Hospital, Baltimore.

October.

55 *Bacteriologic Examinations of the Conjunctival Sac in Typhoid Fever and in Pneumonia. R. L. Randolph, Baltimore.
56 *Tuberculosis Work in Europe. J. Walsh, Baltimore.
57 Moses Maimonides. D. I. Macht, Baltimore.
58 *Observations on Paroxysmal Tachycardia. A. D. Hirschfelder, Baltimore.
59 *A Simple Method for the Quantitative Determination of Proteids in Milk. T. R. Boggs, Baltimore.

55. **Conjunctival Sac in Typhoid and Pneumonia.**—Based on an examination of 100 cases of typhoid fever and 48 cases of lobar pneumonia occurring in the wards of the Johns Hopkins Hospital, Randolph concludes that the bacterial flora of the conjunctival sac during typhoid fever and pneumonia shows practically no difference from the conjunctival flora of individuals who are in perfect health. Randolph states that it does not seem unreasonable to suggest that the exposed mucous surfaces throughout the body are inhabited by bacteria which perform for their resting place functions of a protective character by making the surroundings uncongenial to bacteria of other kinds.

56. **Tuberculosis Work in Europe.**—Walsh concludes his paper as follows: 1. Although the sanatoria in the United States are probably accomplishing better results in individual cases, we have not a sufficient number of sanatoria. Germany, with only two-thirds our population, not one-tenth our area, and not one-twentieth our wealth, has more sanatoria, and is spending three times the amount of money on them. 2. We are not using all the means that might be employed to build and to maintain sanatoria, like insurance companies, beneficial societies, etc. 3. We are lacking in hospitals for advanced cases, and until we get them, wards in general hospitals should be set aside for the care of the tuberculous. Such wards in addition to caring for the consumptive will help in the education of the general physician, the residents, the nurses and the patients. 4. The tuberculosis dispensaries as managed in France or in Germany are the most important elements in the crusade against tuberculosis, and we are woefully lacking in them. A city the size of Philadelphia should have at least half a dozen, and it has one. Baltimore should have three or four, and it has one. Such dispensaries might be supported as follows: One by the city (as in New York City), one by charity, and one by a combination of beneficial societies.

58. **Paroxysmal Tachycardia.**—Hirschfelder reports a case of paroxysmal tachycardia in which the patient's condition was improved very much by the administration of 2 mg. of atropin within two hours. The drug was used in 5-minim doses of the tincture, repeated once or twice at half-hour intervals.

59. **Quantitative Estimation of Proteids in Milk.**—Boggs finds that phosphotungstic acid in hydrochloric acid solution precipitates instantly all the proteids in a finely divided condition. The precipitate contracts evenly in a vertical direction and reaches a constant minimum volume for twenty-four hours. The supernatant fluid is clear and gives no trace of

proteid by any tests. The solution employed is composed as follows: Phosphotungstic acid, 25 grams; distilled water, 125 c.c. After thorough solution is obtained there is added 25 c.c. of concentrated hydrochloric acid, diluted with 100 c.c. of distilled water. This yields 250 c.c. of a 10 per cent. solution of phosphotungstic acid in about 3 per cent. hydrochloric acid. The solution is quite stable if kept in a dark bottle, and gives satisfactory results after months of standing. In a series of over 300 precipitations of various milks the results were surprisingly uniform, particularly in human milk.

Colorado Medicine, Denver.

September.

60 Case of Round Worms in an Adult. M. D. Gibbs, Van Houten, N. M.
61 Case of Rupture of the Uterus. W. H. Swan, Colorado Springs.
62 Albumosuria of Phthisis. J. F. McConnell, Colorado Springs.
63 Dermatoses and Dry Climate. J. M. Blaine, Denver.
64 Treatment of Eclampsia. E. Lawney, Denver.
65 Operative Methods in Puerperal Eclampsia. H. G. Wetherill, Denver.
66 *Medical Organization. E. Stuver, Ft. Collins.

66. **Medical Organization.**—Stuver says that medical organization prevents misunderstandings, ill will and envy, and promotes fraternal feeling and friendship. A good medical society stimulates scientific activity and a healthy rivalry in improving individual efficiency and skill. Such work creates a good impression in the community where it is done, and secures higher fees and greater regard for the men who are doing it. Stuver says that if every physician, individually and collectively, through his local medical society, used his best efforts to secure a pure water supply and to protect it from contamination, for every village, town and city in the nation, it would not be long before typhoid fever would be almost entirely eliminated as one of the scourges of our land. If every doctor insisted that no milk should be sold except that obtained from healthy, properly-cared-for cows, there would be an immense reduction in the infant death rate. If a united profession firmly insisted and demanded the passage of pure food laws, whereby adulteration and sophistication would be punished by severe penalties, and that every package made should contain a true statement of its ingredients and their exact proportions, there would be a great reduction in ill health from that kind of poisoning, and in malnutrition caused by lack of nutrient ingredients. If we had a united and enthusiastic profession calling attention to the benefits arising from vaccination in the prevention of smallpox, the use of antitoxin in the prevention and treatment of diphtheria, and other preventive and sanitary measures, we would hear very little of antivaccination cranks and the evils following their hysterical propaganda; the cheap assaults of still cheaper medical journals, against antitoxin, and the ever-recurring campaign of misrepresentation and abuse of the anti-vivisectionists against the world's greatest benefactors. Stuver urges physicians to organize; to act as a unit; to pull together; to outline a plan of campaign, and then everyone to work toward a common goal. Educate the public on these important topics, and besides being members of a better prepared, better paid and more highly respected profession, physicians will have the proud consciousness of knowing that they have fought a good fight; that they have battled for decency, truth and right, and that their efforts have not been in vain.

The West Virginia Medical Journal, Wheeling.

October.

67 What Can the General Practitioner Do in the Early Recognition and Cure of Mental Disease? W. H. Yeakley, Davis, W. Va.
68 *Value of Union in the Medical Profession—How Remedy the Defects of Organization. A. S. Grimm, St. Mary's.
69 Recent Surgical Operations. J. H. Branham, Baltimore, Md.
70 *Diagnostic Value of the Cystoscope and Ureteral Catheter. J. E. Cannaday, Paint Creek.
71 A Year's Work in Obstetrics, Facts, Figures and Comments. H. K. Owens, Elkins.

68. **Value of Union in the Medical Profession.**—Grimm points out many instances where the organization of the medical profession is beneficial to its members. Such an organization affords an opportunity for physicians to meet and to discuss matters of interest professionally, financially and socially. These meetings, he says, afford an opportunity for a free discussion of the nostrum evil, of life-insurance fees and many other burning questions. He recommended that a circular be printed enumerating the advantages of union and the good the association has accomplished notwithstanding the indifference of the profession at large, this circular to be mailed to each member of the medical profession who does not belong to the association.

70. **Diagnostic Value of Cystoscope and Urethral Catheter.**—Cannaday believes that the cystoscope as an accurate scientific instrument is of comparatively recent inception and perfection; that the other mechanical aids to the collection of the separate urines are not by any means absolutely dependable; that the cystoscope and urethral catheter have their limitations, shortcomings and defects, and are not ideal; that these appliances are of especial value in diagnosing the causes of hematurias, in the discovery of calculi and foreign bodies in the bladder; that a careful study of the ureteral orifices gives more than an inkling of the conditions present in ureter and kidney. Definite information concerning the origin of a pyuria can be elicited by the use of the cystoscope and ureteral catheter which could not have been obtained in any other way.

International Clinics, Vol. II. (Sixteenth Series), Philadelphia.

72 Prognosis and Treatment of the Chronic Valvular Diseases of the Heart. D. Rochester, Buffalo, N. Y.
73 Prevention and Treatment of Acute Nephritis. J. M. French, Cincinnati, Ohio.
74 Treatment of Migraine, with Special Reference to the Use of Cannabis Indica. G. C. de LaCarriere, Paris, France.
75 Prophylaxis of Nervous Disease with Special Reference to Educational Influences in the Growing Child. P. Zenner, Cincinnati, Ohio.
76 Pulmonary Abscess Ending in Recovery without Operation; A Study by Means of the Roentgen Rays. J. M. Anders, and G. E. Pfahler, Philadelphia.
77 Diagnosis and Treatment of Abscess and Gangrene of the Lungs, with Special Reference to Operation. F. T. Lord, Boston.
78 The True Significance of Uric Acid. W. H. Porter, New York.
79 Clinical Types of Persistent Vomiting. H. C. Moffitt, San Francisco.
80 Use of Discarded Street Cars in the Open-air Treatment of Tuberculosis. J. J. Walsh, New York.
81 An Unusually Large Aneurism of the Abdominal Aorta. H. Goodloe, St. Louis, Mo.
82 Cardiac Lesions Associated with Arteriosclerosis. F. C. Wilson, Louisville, Ky.
83 Miscellany from the Paris Medical World; The Use of X-rays as a Social Question; Heroinomania; Serum Treatment of Exophthalmic Goiter, and of Hemophilia. C. K. Austin, Paris, France.
84 Infantile Derangements due to Improper Breast Feeding, with Suggestions for the Prevention and Treatment of Constitutional Disorders, Such as Rickets and Marasmus. L. Fischer, New York.
85 Hysterical Neuroses of the Stomach, with Report of a case of Rhythmical Borborygmi of Hysterical Origin. J. H. Lloyd, Philadelphia.
86 Tumors of the Mammary Gland, with Special Reference to Their Diagnosis, Prognosis, and Treatment. W. L. Rodman, Philadelphia.
87 Jacksonian Epilepsy due to Brain Tumor; Operation; Recovery; Tuberculous Abscess of Shoulder-Joint, Mistaken for Progressive Muscular Atrophy. M. Schlapp, New York.
88 Principles of the Treatment of Fractures, with a Special Consideration of those of the Upper Extremity. G. G. Ross, Philadelphia.
89 Experimental Researches Bearing on Surgical Intervention in Nephritis. A. Rovighi, Bologna, Italy.
90 Disorders of the Umbilicus, with Special Reference to the New-born and the Infant; I. Umbilical Hernias. A. E. Gallant, New York.
91 Fetal Hydrocephalus as a Cause of Delay in Labor. J. W. Ballantyne, Edinburgh, Scotland.
92 The Female Perineum and its Repair. W. A. N. Dorland, Philadelphia.
93 Gonorrhea in Women. C. Lockyer, London.
94 Two Cases of Ectopic Pregnancy with some Unusual Features. L. Frank, Louisville, Ky.
95 Choice of Medicinial Agents for Topical Use in Gynecologic Practice. C. D. Palmer, Cincinnati, Ohio.
96 Intratracheal and Intralaryngeal Injections. W. G. B. Harland, Philadelphia.

Philippine Journal of Science, Supplement III, Manila.

August 15.

97 New or Noteworthy Philippine Plants. V. E. D. Merrill, Manila, P. I.

Texas Medical News, Austin.

September.

98 Treatment of Paralysis Agitans. G. F. Butler, Chicago.
99 Alcohol in the Treatment of Typhoid Fever. W. O. Wilkes, Waco.
100 Diseases of the Biliary Tract—Special Reference to the Pathology and Differential Diagnosis of Cholecystitis and Cholelithiasis. W. L. Crosthwait, Holland.

Wisconsin Medical Journal, Milwaukee.

September.

101 The Clinical Aspect of Stomach Surgery. A. J. Ochsner, Chicago.
102 Appendicitis and the Differential Diagnosis of Appendicitis in Children. F. E. Sutherland, Janesville.
103 Contract and Club Practice. W. H. Saunders, Kenosha.
104 Infant Feeding. J. Binnie, Poynette.

The Medical Standard, Chicago.

October.

105 Notes from Nothnagel's Clinic. G. B. Hassin, Chicago.
106 German Gynecology. L. Waite, Chicago.
107 Practical X-ray Therapy. N. M. Eberhard, Chicago.
108 Tractus Genitalis in Splanchnoptosia. B. Robinson, Chicago.

Milwaukee Medical Journal.

September.

109 The Value of Clinical Tests Used in Typhoid Fever. C. A. Sanders, Waupaca, Wis.
110 Signs and Symptoms of Value in the Prognosis of Typhoid Fever. H. H. Milbee, Marshfield, Wis.
111 Intestinal Hemorrhage and Perforation. C. v. Neupert, Jr., Stevens Point, Wis.
112 Management of Typhoid Fever in Private Homes. S. W. Keys, Weyauwega, Wis.
113 Therapy of Hemorrhages of Stomach and Intestines. J. Bruess, Milwaukee.

Cleveland Medical Journal.

October.

114 Myocarditis in Acute Infectious Diseases. J. H. Lowman, Cleveland.
115 Scope and Aim of Orthopedic Surgery. H. O. Feiss, Cleveland.
116 Surgery of the Gall Bladder and Bile Ducts. A. F. House, Cleveland.
117 Case of Poisoning with Hellebore. J. W. Boss, Birmingham, Ohio.

Albany Medical Annals.

October.

118 Nil Desperandum as an Article of the Refractionist's Materia Medica. G. M. Gould, Philadelphia.
119 Tumors of the Trachea. C. F. Thelsen, Albany.
120 Address to Graduates of the Samaritan Hospital Training School for Nurses. G. A. Blumer, Providence, R. I.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

September 29.

1 Delimitation of General Paralysis of the Insane. W. J. Mickle.
2 *Etiology of Dementia Paralytica. A. R. Diefendorf.
3 *Cerebral Localization and the Study of Psychiatry. C. K. Mills.
4 The Insanity of Inebriety. T. D. Crothers.
5 Dementia Præcox. C. K. Clarke, A. Meyer and F. X. Dercum.
6 Types of the Devolutional Psychoses. C. B. Farrar.
7 Proposed Sterilization of Certain Mental Degenerates. R. R. Rentoul.
8 Mind in Medicine. A. T. Schofield.
9 Rational Psycho-Therapeutics. P. Dubois.
10 *Cerebral and Ophthalmic Complications in Sphenoidal Sinusitis. St. Clair Thomson.
11 *Pneumotoxin. A. MacFadyen.
12 *Rupture of Interstitial Tubal Pregnancy; Hysterectomy. G. B. Hunt.

2. **Etiology of Dementia Paralytica.**—Diefendorf expresses the belief that this disease is increasing in its prevalence, and particularly in cities. Studying 172 cases at the Connecticut (U. S. A.) Hospital for the Insane, he found that there is one paretic from the country to 5.4 from the city, and one male to 3.9 females. Among the women the striking fact is that 17 per cent. of them were prostitutes. Examining closely into the importance of the prominent etiologic factors in several occupations which show great proneness to paresis, it was evident that alcohol and syphilis predominate. The average age at onset is 42 years, the limits being 23 and 68, the largest number of cases occurring between the ages of 35 and 40. Defective heredity also is a potent etiologic factor. Excessive alcoholism was present in 60.2 per cent. of the cases. Spyhilis occurred in 52.5 per cent. of the cases. Head injury existed in only 23 per cent. Defective heredity existed in 41 per cent. Insolation occurred in only 1.2 per cent. of the cases, and plumbism in only one case. Physical and mental overwork were causes in only 4.9 per cent. of the cases, and emotional shock in 3 per cent. Diefendorf considers these conditions as contributory, contracted only in producing the causation of paresis, and believes that the actual cause is still unknown.

3. **Cerebral Localization.**—Mills discusses particularly the cerebral mechanism of hallucinations and illusions and the classification of the forms of insanity. He says that the factors which should be considered in attempting a classification of insanity are: 1. The structural rests or aberrations due to heredity, which predispose the brain to mental disease. 2. The course and prognosis of the form of insanity—elements of age and development periods here largely entering. 3. The election of particular cerebral mechanisms by the exciting causes, bacterial or toxic, of the attack of insanity. The best general subdivision of insanities is, he believes, into the teratologic or abiotrophic and the pathologic or acquired. Under teratologic insanities he classes first the dementias due to structural arrest (embryonal apotentiality), including (a) congenital idiocy and imbecility, (b) dementia præcox, (c) dementia choreica and other presenile dementias, (d) senile dementia. Second, the insanities due to structural insufficiency, not of such degree as to produce primary dementia. Under this head would be included (a) the melancholia-mania group, (b) paranoia, (c) hysteria, (d) epilepsy, (e) psychasthenias. The second great division comprises the pathologic insanities. Under this head would be included: First, those due to diffuse destructive organic disease, as (a) the forms of imbecility or mental defect due to postnatal causes, (b) general paresis, (c) syphilitic insanity due to gross lesions and degenerations (d) traumatic insanities; second, the insanities due to toxemias and exhaustion.

10. **Complications in Sphenoidal Sinusitis.**—Thomson reports two cases in which the sphenoidal origin of intracranial suppuration was fully established. In one case it assumed the form of acute suppurative basic meningitis, and in the other that of thrombophlebitis of the cavernous sinus. In both cases the diagnosis was made during life and was confirmed by postmortem examination. Thomson states that the reason why the association of sphenoidal sinusitis with disease in the orbital and cranial cavities has not been hitherto more fully substantiated is that medical men do not attach much importance to the condition of the nasal cavities, either at the bedside or on the postmortem table.

11. **Pneumotoxin.**—McFadyen succeeded in extracting an acute lethal toxin from the bodies of virulent pneumococci, and is now carrying on a series of immunizing experiments with a view to procuring an antitoxic serum.

12. **Interstitial Tubal Pregnancy.**—Hunt reports a case in which the gestation sac was situated in the wall of the uterus. The patient, a multipara, aged 30, was seized with sudden pain in the left side of the lower abdomen which led to the diagnosis of ruptured tubal pregnancy. At the operation a small ruptured sac full of clotted blood was seen projecting from the wall of the uterus just above the point of the emergence of the left tube. In order to stop the hemorrhage it was necessary to do a hysterectomy. The patient recovered.

The Lancet, London.

September 29.

13 Pharyngeal Abscesses. G. E. Waugh.
14 *Arterial Blood Pressure in Heart Disease. H. J. Starling.
15 Streptococci Pathogenic for Man. F. W. Andrewes and T. J. Horder.
16 Thoracotomy for Traumatic Hemothorax Due to a Wound of an Intercostal Artery. D. Duff and J. Allan.
17 *Two Cases of Hepatic Abscess Treated by the Transpleural Operation. H. Taylor.
18 *Endemic Hematuria. P. G. Stock.
19 *A Case of Ainhum. D. M. Alexander and R. Donaldson.
20 *Study of a Case of Plague. J. B. Cleland.
21 *The Suprapubic Dressing. G. H. Colt.

14. **Arterial Blood Pressure in Heart Disease.**—Starling found that no matter how bad the condition of the patient or how ineffective the work of the heart, the arterial blood pressure is never below normal in any case of so-called heart disease. He emphasizes the importance of a reading of arterial pressure in all cases of failing heart because it furnishes an index as to the treatment. A number of cases in point are cited.

17. **Hepatic Abscess.**—In the two cases reported by Taylor the abscess, instead of making its way toward the abdominal wall, took an upward course, making it necessary to approach the abscess through a transthoracic incision.

18. **Endemic Hematuria.**—Stock reports 65 cases of endemic hematuria that were caused by the bilharzia hematobium. In view of the fact that these organisms are invariably killed by acute infections, Stock suggests the hypodermic injection of Wright's antityphoid serum in the treatment of these cases. Two of his patients are now being treated accordingly.

19. **Ainhum.**—Alexander and Donaldson report the case of a seaman, a native of Jamaica, aged 44, who suffered from ainhum for about 20 years. There was no history of loin pains, of any other persons in the family having suffered from this disease or from epilepsy, or of the patient having at any time worn toe rings. He had gone barefooted until he was 14 years old, but there was no jungle and very little grass at his home, thus precluding trauma as the cause of his trouble.

20. **Plague.**—According to Cleland, the onset of signs and symptoms in plague is the first indication of commencing the recovery from the disease. He thinks this observation may throw some light on the lengthy incubation periods of various infectious diseases. He believes that the skin and inoculation theory of plague is a correct one.

21.—See abstract in THE JOURNAL, Dec. 2, 1905, page 1763.

The Journal of Tropical Medicine, London.

September 16.

22 Sprue and Chronic Intestinal Lesions. J. Cantlie.

Glasgow Medical Journal.

September.

23 *Unusual Case of Ruptured Tendo Achillis. D. Macartney.
24 Case of Marked Paroxysmal Dyspnea, Occurring in a Patient with Double Aortic Disease, and Wherein, After Death, Were Disclosed Striking Appearances of Chronic Mediastinitis. J. S. M'Kendrick.
25 Clinical and Pathologic Aspects of a Fulminating Case of Epidemic Cerebrospinal Meningitis of the "Convulsive Comatose Type" of Tourdes. G. A. Allan and J. S. Dunn.

23. **Rupture of Tendo Achilles.**—Macartney reports the case of a young man, aged 19, who sustained a rupture of the left tendo Achilles, the time and circumstances connected with the injury being unknown. There was a rounded, tumor-like mass at the mid-leg composed presumably of the contracted free end of the tendon and part of gastrocnemius muscle. Macartney made a transverse incision through half of the muscle well up the leg, split the muscle vertically by a longitudinal incision down its middle to a short distance above the tendon, then bringing the upper part of the muscle down to the lowest portion of tendon sheath. The inverted portion of the muscle was stitched to both sides of the sheath by a dozen or so of sutures of strong catgut. Enough of the muscle tissue survived the restored power to the limb. Nine months after the operation the patient walked well and without limping.

The Dublin Journal of Medical Science.

September.

26 Clinical Report of the Rotunda Hospital. E. H. Tweedy.
27 Two Cases of Infantile Hemiplegia. D. J. O'Connor.
28 A Note on the Opsonic Index. B. Brooke.

Presse Médicale, Paris.

29 (XIV, No. 71.) Considérations générales sur le service de santé au combat (sanitation in war.) F. H. Renaut.
30 *Dilatation aigue du cœur chez le nouveau-né et asphyxie bleue (acute dilatation of heart in the newly born and blue asphyxia). J. Ferreira.
31 *Improvisation d'un milieu opératoire a la campagne (operations in the country). P. Sikora.
32 (No. 72.) Les nouvelles théories des solutions dans leurs rapports avec la médecine. S. Leduc.
33 Complications pulmonaires et pleurales des corps étrangers des bronches latents on méconnus. Perrin and J. Parisot.

30. **Acute Dilatation of the Heart in the Newborn.**—Ferreira says that in the asphyxia of the new born it is not enough to stimulate the respiration, but that the myocardium must be stimulated also. It frequently happens that the asphyxia is due to acute dilatation of the heart, and he has been able to save a number of infants, apparently otherwise doomed, by measures addressed to the myocardium. If the circulation is interfered with from any cause, the right auricle becomes exhausted by the excess of pressure, and it stretches and the child is born with the symptoms of "blue asphyxia." Systematic percussion, especially the sensation of resistance to the finger rather than the sounds, reveals this acute dilatation of the right auricle, and it is a frequent finding at autopsy of new-born infants. Sometimes a probe can be passed readily from one auricle into the other. Examination of the blood discloses excess of blood corpuscles. The condition of blue asphyxia, he states, is merely an acute phase of cyanosis. In both cases there is acute dilatation of the right auricle. Injection of camphorated oil has given excellent results in his experience. He injects 1 or 2 c.c. of a mixture of 0.3 gm. camphor in 30 gm. of olive oil. An artificial carbonated bath, according to Mougeot, has a manifest tonic action on the myocardium. Tapping massage of the precordial region also has a tendency to incite the myocardium to contract with greater energy.

31. **To Improvise an Operating Room.**—Sikora gives minute instructions how to transform any room and patient into an aseptic operating field. The main reliance is on boiling and singeing, but he advises raising the boiling point of water, etc., by adding sodium carbonate or borate. A handful of wood excelsior can be used instead of a brush for scrubbing, after thorough sterilization. A thermocautery can be improvised out of a long pair of forceps held with a wet compress, and artificial serum can be easily prepared by boiling a level teaspoonful of salt in a quart of boiled water for three-quarters of an hour. All the vessels and spoons, etc., used should be singed inside and out. He has improvised an operating table by placing a kitchen chair on a table, resting on the edge of its seat and back, and fastened immovably. A broomstick was then tied across the highest crossbars of the chair, and a blanket was thrown over the whole and a sheet over this. The patient's shoulders rested on the table, while the pelvis and thighs rested on the sloping back of the chair and the legs on the projecting ends of the broomstick on each side. He found this much firmer and better than any arrangement of cushions or manual support. Five dishes are necessary for the disinfectants for the hands, etc., and seven if there is an assistant. If there is no immediate haste the room should be emptied, washed and sprayed with peroxid of hydrogen, but in case of haste, he isolates the furniture, floor and ceiling by covering them with freshly laundered sheets. Still better isolation is obtained by supplementing these measures by tacking one edge of a sheet to the ceiling or throwing it over a rope, to curtain off in this way three sides of the space reserved for the operation, leaving open the side toward the light, with a fourth sheet for a roof over the space. In selecting a room, light is the main consideration.

Archiv f. Verdauungskrankheiten, Boas', Berlin.

Last indexed, page 312.

34 (XII, No. 4.) Acidity of Gastric Juice in case of Chronic Obstipation.—Das Verhalten der Magensaftacidität bei chronischer Obstipation. F. Samuely.
35 Fat-splitting Capacity of Stomach.—Ueber die Fähigkeit des Magens, Fett zu spalten. S. von Pesthy.
36 Untersuchung über die phosphorhaltigen Bestandtheile der Darmschleimhaut (phosphorus-containing elements in intestinal mucosa). A. Borri.
37 *Sahli's New Test of Stomach Functioning Without the Use of the Stomach Tube.—Die Desmoid-Reaktion und ihre radiologische Weiterbildung durch Schwarz. L. Horwitz.
38 Nature of Nothnagel's "Yellow Mucous Granules" in Infants' Stools.—Ueber das Vorkommen und die Natur der Nothnagelschen "gelben Schleimkörner" in den Säuglingsfæces. O. Spiegel.

37. **Desmoid Reaction as Test of Stomach Functioning.**—Sahli's desmoid test of the stomach functioning has been described in these columns, his original communication having been summarized on page 1820 of vol. XLIV, June 3, 1905. Horwitz has been applying the test in 44 cases of various gastrointestinal affections, and has been impressed with the importance of the findings. He says that examination of the stomach contents after a test meal is unquestionably the best means of testing the functioning of the organ, but in case the use of the stomach tube is contraindicated for any reason or its findings are dubious, the desmoid test will be found very instructive. It is especially instructive when the little bag of goldbeater's skin is filled with bismuth, 1.5 gm., and tied with thread, and ingested during a test breakfast, according to Schwarz's modification of the test. Radioscopy then shows the little bag as a round black spot in the lowest part of the stomach. The patient should lie on the left side to retain the bag in the stomach as long as possible, and should take noth-

ing during the entire day except tea and water. Sahli first used goldbeater's skin for the little bag, but as he found that this material varied so widely in thickness and resistance, he now uses thin rubber tissue and ties the bag with No. 00 catgut, depending on the digestion of the catgut to release the contents of the bag. He includes in the bag 0.05 gm. of methylene blue with or without 0.1 gm. iodoform and about 0.04 gm. each of licorice extract and powder. Schwarz thinks that the methylene blue is liable to diffuse through too thin a membrane. Horwitz answers the various criticisms of the desmoid test, showing that none of them actually discredits it, and that it has unquestionably an important sphere of its own. Sahli says that the green aspect of the urine from 4 to 6 up to 20 hours afterward, indicates a positive reaction, and that in such a case the digesting power of the gastric secretions is approximately normal. Sahli examines the urine at long intervals, up to 20 hours, to allow for variations in absorbing capacity. Horwitz believes that an interval of even 15 hours throws grave doubt on the stomach functioning. In such a case the test should be repeated and possibly preceded by giving a little methylene blue beforehand, to test the absorbing capacity. If radioscopy shows the bismuth bag as a round spot in the stomach or intestines later than three hours, hypoacidity or anacidity may be assumed. When the connective tissue of which the bag is made is digested at any point, the bismuth escapes and spreads out over the region. If this occurs in an hour and a half after swallowing the bag, extreme hyperacidity is present. If it does not occur until two hours, moderate hyperacidity may be assumed. If it occurs in two and a half hours, normal conditions prevail. If not until after three and a half hours, slight hypoacidity may be assumed, and extreme hypoacidity if from four to four and a half hours elapse before the contents of the bag escape; five hours indicates anacidity.

Horwitz applied the desmoid test after dinner after previously testing the stomach contents after a test breakfast. All the evidence indicates that the raw connective tissue of the desmoid bag is not digested by the pancreatic or intestinal juice, only by the gastric juice, and only when this contains free hydrochloric acid and pepsin. The findings in his cases harmonized in nearly every instance with those of the preceding examination of the stomach content. He directed the patients to urinate before dinner and then at 3 hour intervals, until the urine had turned green, sending him each sample separately. The desmoid test gave invariably negative results in cancer cases. Alkaline urine has to be boiled with acetic acid to oxidize the chromogen of the methylene blue. Schwarz's radiologic findings contradict some well-established ideas in some respects, for instance, in his extensive experience, he never found ingesta of any kind retained longer than 10 hours in a stomach free from stenosis and of comparatively normal size. The normal stomach, he found, did not always digest catgut 00, while this was sometimes digested by the intestinal juice. Horwitz did not try the Schwarz modification of the desmoid test.

Beiträge z. Klinik der Tuberkulose, Würzburg.

Last indexed, vol. xlvi, page 1076.

39 (V, No. 4.) *Conjugal Tuberculosis.—Lungenschwindsucht beider Ehegatten. W. Weinberg.
40 *Sodium Silicate in Treatment of Pulmonary Tuberculosis and Participation of Silicic Acid in Production of Lung Stones.—Ueber die therapeutische Verwendung des kiesel-sauren Natriums und ueber die Beteiligung der Kieselsäure an der Bildung von Lungensteinen. Zickgraf.
41 Beiträge zur Statistik und Klinik der Tuberkulose. J. Wiesel.
42 Hemoptysis in an Infant.—Zur Lehre der Hämoptoe im Säuglingsalter. J. Kasten.
43 *A Thousand Sanatorium Cases.—Tausend Heilstättenfälle. J. Nagel.
44 *Ueber Tuberkulose der Schädelbasis (of base of skull). W. Stockert.

39. **Conjugal Tuberculosis.**—Weinberg's statistics show that widows and widowers, surviving the deaths from tuberculosis of their consorts, suffer from tuberculosis in double the percentage exhibited by the rest of the population. Widows are more frequently affected than widowers, and the proportion is larger in the crowded homes of the poor than among the well-to-do. His statistics were collected at Stuttgart, and are classified and tabulated.

40. **Value of Sodium Silicate in Tuberculosis.**—Zickgraf has been experimenting with sodium silicate as a means to aid the organism in its battle against the tubercle bacilli. Its use was suggested by Kobert in 1901, as mentioned in these columns at the time. The silicate becomes deposited in the morbid process and helps to transform the fibrous connective tissue proliferation into permanent cicatricial barriers. His experience has confirmed its absolute harmlessness in internal administration. It is absorbed in the body and appears in the urine merely as an increased amount of the normally present silicic acid. It seems to exert a slight leucotactic action on its way through the blood, while its share in the petrification of the tuberculous tissue is important. Some of his 22 patients had coughed up calculi from the lungs. One in particular had been tuberculous for ten years and had treated himself with an herb tea for a long time. The herbs used were rich in silicates, and probably they were responsible for the large proportion of silicates found in the calculi from the lungs. The French have long been proclaiming that one of the most potent factors in tuberculosis is the "demineralization of the body." If this be true, Zickgraf says, the administration of silicic acid is progress in the right direction. It supplements the ordinary hygiene and dietetic measures, and the results in the 22 cases in which Zickgraf applied this treatment were highly encouraging. It is possible that the silicic acid is better adapted for the desired purpose than any other mineral yet tried.

43. **One Thousand Tuberculous Patients Treated at Cottbus Sanatorium, 1900-1904.**—Nagel analyzes this material and summarizes the lessons learned. In the large majority of cases the effects of the sanatorium treatment were the restoration to health and to complete earning capacity with no signs of recurrence to date. The findings on examination after several years are tabulated from various points of view.

44. **Tuberculosis of Base of Skull.**—Stockert's patient was a butcher of 22, of a healthy family. He had had several attacks of articular rheumatism and during the last nine months had headache and pain in the left upper jaw, with other symptoms suggesting a tumor at the base of the skull. Meningitis developed and he died suddenly from arrest of the respiration. A tumor was found as surmised, but it proved to be a tuberculous lesion instead of the assumed cancerous growth. The tumor had involved the left base of the skull, grown around the left optic nerve, and penetrated down into the pharynx. The clinical and microscopic findings were those of a malignant growth, but the microscope showed it to be a granulating tuberculous process. A small, apparently fresh tuberculous process was discovered also in the left apex.

Berliner klinische Wochenschrift.

45 (XLIII, No. 31.) Ueber die Antiamboceptoren gegen die komplementophile Gruppe des Amboceptors. E. Friedberger and C. Moreschi.
46 *Injurious Action of Light and Air on Milk.—Ueber belichtete Perhydrasemilch. H. Much and P. H. Römer (Marburg). Concluded.
47 (No. 32.) *Bilateral Resection of Upper Jaw.—Die beiderseitige Oberkiefferesektion. O. Hildebrand.
48 Weiteres zur Kenntnis der myeloiden Umwandlung (transformation). H. Hirschfeld.
49 Head's Zones in Respect to Affections of Digestive Organs.—Zur theoretischen und praktischen Bedeutung Head'scher Zonen bei Erkrankung der Verdauungsorgane. L. Kast.
50 *Paraffin-Injektionen und -Implantation bei Nasen und Gesichts-Plastiken (nose and face). H. Eckstein.
51 (No. 33.). Ueber Polyarthritis chronica deformans. H. Curschmann.
52 *Ptomain Poisoning and Paratyphus.—Fleischvergiftung und Paratyphus. H. Trautmann (Hamburg).
53 Determination of Sugar in Urine.—Ueber Zuckerbestimmung im Harn. S. Rosenberg.

46. **Action of Sunlight on Milk.**—Much and Römer announce that the results of their tests have demonstrated that sunlight and oxygen alter the taste of milk after even a brief exposure. They affect the fat in the milk, altering it to a kind of tallowy consistency from oxidation of the fat. Milk thus altered is liable to affect infants injuriously. They advise that milk bottles should be wrapped in black, red or green paper. The same effects are observed after exposure to sunlight with their perhydrase milk as with ordinary raw milk. The advantages claimed for their aseptic perhydrase milk were summarized in these columns recently. They treat ordinary milk with peroxid of hydrogen which sterilizes it completely.

The peroxid of hydrogen is then eliminated with a "catalase" derived from beef cattle. Milk thus treated seems to keep indefinitely, they state, even without ice.

47. **Bilateral Resection of Upper Jaw.**—Hildebrand has had fine functional and cosmetic results after excision of a cancer in the soft parts of the palate or upper jaw. He illustrates his technic, with the excised parts. Only 30 cases are on record of complete resection of the upper jaw, and hitherto no effort has been made to cover the defect. This he accomplished by a transverse incision across the palate, separating the sound soft palate from the diseased soft parts of the hard palate. After removal of the jaw he sutured the mucosa of the cheek to the raw edge of the soft palate, and also sutured the mucosa of each cheek together, across the gap. The newly formed palate is quite low, but it soon retracts and the aspect of the roof of the mouth approximates normal, while the patient can swallow and talk naturally.

50. **Paraffin Prothesis.**—Eckstein brings this subject down to date, with illustrations of patients, instruments, etc. He has injected paraffin into the nose in 200 cases, the majority were cases of inherited syphilis. He has found implantation of a triangle of silver wire a great help for the permanence of the results obtained. In time the middle part perforates the skin, and he cuts off this projecting part. He has made about 2,000 single injections in hundreds of cases of all kinds, without a mishap. He uses paraffin with a high melting point and sometimes implants several cold thin sheets instead of softening and injecting the paraffin.

52. **Ptomain Poisoning and Paratyphus.**—Trautmann ascribes both of these to the same origin. The rapid onset of the symptoms from the former and the slow onset and mild form of the symptoms of paratyphus he ascribes to the fact that in ptomain poisoning the phase of incubation has been gone through with in the animal or meat before the toxins reach man. In paratyphus, on the other hand, man has to pass through a stage of incubation, and the resulting formation of toxins is not so extreme as in the disease in the animal producing the ptomains.

Deutsches Archiv f. klinische Medizin, Leipsic.

Last indexed, page 1333.

54 (LXXXVII, Nos. 5-6.) *Ueber die durch Nebennieren-Präparate gesetzen Gefäss- und Organ-Veränderungen (changes due to suprarenal preparations). J. Biland.
55 Ueber Harnsäurebestimmung durch direkte Fällung (direct precipitation test for uric acid). Meisenburg.
56 *Ueber Mast-Zellen-Leukämien. G. Joachim.
57 *Funktionelle Pankreas-Achylie. A. Schmidt (Dresden).
58 *Forms of Sepsis Originating in Urinary Passages.—Katheterfieber durch Staphylococcus pyogenes albus. Allgemein-Infektion mit Bakterium coli. G. Jochmann.
59 Diffuse Phlegmone des ganzen Esophagus und Magens (of entire esophagus and stomach). M. Pfister.
60 Blood Coagula in Sputum in Case of Chronic, Hemorrhagic Bronchitis.—Ueber das Vorkommen von Blutgerinnseln im Auswurf. W. Ebstein (Göttingen).
61 Ueber die medikamentöse und diätetische Behandlung des Blasen- und Nierenbecken-Katarrhs (of bladder and renal pelvis). G. Edlefsen.
62 Relations Between Duration of Disease and Age of Intestinal Lesions in Typhoid Fever.—Beziehungen zwischen Krankheitsdauer und Alter der Darmläsionen beim Abdominal-Typhus. E. Wennagel.
63 2 Fälle von Adams-Stokes'scher Krankheit mit Dissoziation von Vorhof- und Kammer-Rhythmus und Läsion des His'schen Bündels. E. Schmoll (San Francisco).
64 *Zur Pathologie der Nierenkrankheiten, nach klinischen Beobachtungen bei totaler Harnsperre (total anuria). H. Pässler.
65 *Zur Kenntnis der durch das sogen. Bact. paratyphi hervorgerufene Erkrankungen. Rolly.

54. **Changes in Vessels and Organs After Injection of Suprarenal Preparations.**—Biland relates the pathologic anatomic changes found in 18 rabbits after injection of suprarenal preparations, with or without potassium iodid. The results conflict in some respects with those published by others.

56. **Mast Cell Leukemia.**—Joachim reports the details of 2 cases of what he calls "mast cell leukemia," as the proportion of mast cells reached 56.4 per cent. in one and 53.6 per cent. in the other case. He thinks the affection is a variety of myelemia. The prognosis is less favorable than that of ordinary myelemia, especially in respect to Roentgen treatment.

57. **Functional Pancreas Achylia.**—Schmidt analyzes 3 cases that have come under his observation in which the pancreatic secretion seemed to be partially or totally suspended. In 2 patients the trouble dated from childhood, and with its ups and downs at times reduced them to a menacing condition. In the third patient the trouble appeared as an acute, recurring affection, with participation of the liver in the disturbances. Treatment with pancreas preparations is indicated as a matter of course, he states, but it should be supplemented by regulation of the diet and treatment of concomitant stomach disturbances. The value of regular rinsing of the stomach can not be overestimated in chronic intestinal affections. It is encouraging, he declares, to know that functional pancreatic achylia is not only amenable to treatment, but that a complete cure can be realized in time, even in the most chronic cases. The first patient was a lad of 12 who had had severe chronic diarrhea for six years. No organic affection could be discovered, but the stools contained nearly four times as much fat as normal stools, while the total mass on a test diet was 5,048 moist and 117 dry. The corresponding figures in normal stools are 249.5 and 59.3. The second patient was a man of 41 with diarrhea from childhood, much worse during the last six years, very weak and emaciated, with slight motor insufficiency of the stomach. The stools showed macroscopic remains of meat, much fat and microscopic starch, with acid fermentation and small flakes of mucus containing bile pigment, suggesting slight catarrh of the small intestine. Under the regular use of a preparation of pancreas substance and daily rinsing of the stomach the patient continued to improve and in the course of five months all the symptoms of gastrointestinal disturbance had vanished. The third patient was a man of 47 who suddenly presented symptoms of digestive disturbance, abdominal pain, vomiting, diarrhea, moderate enlargement of the liver and slight icterus. There was no mucus in the stools, but macroscopic relics of undigested meat and much fat, microscopic fat crystals, drops of neutral fat and starch grains were noted, and Schmidt's "bag test" gave positive findings in all the cases. This test is based on the fact that the pancreatic secretion is the only one able to digest nuclear substance, and a small cube of beef in a little bag of thin silk gauze passes unmodified through the digestive tract unless it is acted on by the pancreatic secretion.

58. **Sepsis Originating in Urinary Passages.**—Jochmann reports 3 cases; in one the sepsis was due to streptococci and in the others to the colon bacillus. One patient was a man of 22 who had a stricture in the urethra as a sequel of gonorrhea. About eighteen months later cystitis developed, followed by general infection with the colon bacillus. The fever displayed a marked intermittent type, with unusually steep ascents, accompanied by chills. The leucocytes numbered 9,200 in one and 9,800 in the other case.

64. **Pathology of Kidney Affections.**—Pässler reports the case of a woman of 42 who died the twelfth day of absolute anuria resulting from compression of both ureters by a cancerous growth. From study of the phenomena observed and of similar cases that have been published he deducts the following conclusions: 1. If the assumption is correct that the phenomena of acute eclamptic uremia are the consequences of an intoxication, the supposed "uremic poison" can not be a body present in normal urine. 2. Hydremic plethora may induce edema, but the edema in this case differs materially from the so-called typical dropsy of acute nephritis. Even hydremic plethora plus retention of waste matters was unable in the case reported to induce the production of edema of the type of anasarca accompanying acute nephritis. The tracing of the blood pressure in the case related sustains the theories which ascribe the rise in the arterial blood pressure in nephritis to retention of elements of the urine.

65. **Paratyphoid Affections.**—Four cases are described and the clinical picture of a paratyphoid affection is drawn. It seems to be essentially a severe gastroenteritis with a tendency to bleeding and hemorrhagic processes, with consecutive ulcerations, liable to occur irregularly at any part of the gastrointestinal canal.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

66 (XXXII, No. 37.) Die Behandlung der Epilepsie. E. Redlich. Clinical lecture.
67 *Suction Mask to Act on the Lungs.—Eine Lungensaugmaske zur Erzeugung von Stauungs-Hyperämie in den Lungen. E. Kuhn (Berlin).
68 Beitrag zur Aspergillus-Mykose der menschlichen Lunge. F. Solmersitz.
69 Dietetische Beobachtungen an Lungen-Kranken. W. v. Stoutz and H. Ulrici.
70 *3 Fälle von Polyglobulie mit Milz-Tumor (enlarged spleen). J. Bence.
71 Behavior of Spleen in Case of Carcinoma.—Das Verhalten der Milz bei Carcinom. J. C. Hollister (Chicago).
72 Bemerkungen zur Hände-Disinfektion und Asepsis bei Laparotomien. A. Sippel.
73 *Muskel-Transplantation bei Behandlung der Kinderlähmung (infantile paralysis). A. Sachs.

67. **Mask to Induce Hyperemia in the Lungs.**—Kuhn refers to the fact that Bier's attention was attracted to the advantages of artificial hyperemia in therapeutics by the observation that cardiac defects accompanied by stasis of the blood in the minor circulation are extraordinarily rarely associated with tuberculous lesions. On the other hand, any cause that induces anemia in the lungs is almost certain to be accompanied by them. He discusses other facts which tend to show that tuberculous lesions do not locate where there is hyperemia from any cause; the anemic regions are those affected. Kuhn has noticed that there is always considerable hyperemia in the lungs of suffocated persons. On these premises he has devised a means to promote the healing of tuberculous lesions in the lungs by inducing partial suffocation. The mask he uses for the purpose restricts the intake of air while it does not interfere with the expiration of the air through mouth and nose. The result is that the inspired and expired air under these conditions acts on the surface of the lung the same as a suction cup applied to any other part of the body. The suction actually has more favorable conditions here than elsewhere, as the superficially located, thin-walled capillaries are more accessible here than elsewhere. The inspiration lasts longer than usual, and this keeps the air longer in contact with the blood. Roentgen views, he states, show that the lungs are flooded with blood after the use of the mask, especially the upper portions which seem to feel the effect of the suction most strongly. He has applied the mask to 40 patients, and always with good effect, even in the case of a woman who had been spitting blood. The procedure is merely an exaggeration of the natural physiologic conditions, and he thinks that it can not do harm. No untoward effects were observed in any instance.

70. **Polycythemia With Enlarged Spleen.**—Bence reports 3 cases in detail. He treated the patients with repeated venesection, and each time the general condition showed marked improvement, the congestions and the headache were relieved. Inhalation of oxygen had a similar effect. He administered daily from 50 to 100 liters of oxygen, after which the patients always felt much better, losing their dizziness. The chief disturbances experienced by the patients are due to the overfilling of the vessels from the extreme viscosity of the blood. If the blood can be rendered more fluid, these disturbances subside, and this can be accomplished with venesection and inhalation of oxygen. Koranyi had a patient with 7,400,000 reds; six days of oxygen inhalations reduced the number to 6,000,000. The inhalations were kept up for three months or more, and by the end of a year the number was 4,800,000. The patient was improving when she began the oxygen, but it certainly helped in the favorable course. In one case Bence restricted the patient to a fluid and semifluid diet. The effect on the viscosity of the blood seemed to be beneficial and the patient felt much better on this régime.

73. **Transplantation of Muscle in Treatment of Infantile Paralysis of Arm.**—Sachs has successfully applied Hildebrand's method of transplanting the pectoralis major to take the place of the paralyzed deltoid muscle. The results are such that he does not hesitate to call the procedure ideal. A muscle does not atrophy if its nerve is retained intact, with the vessels that nourish the nerve, even if otherwise the muscle is excluded from the circulation. He warns that in transplanting a muscle it must be handled as gently as possible. A difference was observed in the ultimate growth of one part of the muscle which had been slightly injured while detaching it. The patient was a child of 6; the paralysis was of four years' standing. Under chloroform, the incision was carried from the fourth rib, corresponding to the origin of the pectoralis major, along the sternum, then above and parallel to the clavicle to the middle of its outer third, and then down at a right angle as far as the spine of the scapula. The flap was turned back toward the arm, exposing the entire pectoralis major and the deltoid. The pectoralis was then detached from its origin and from the sternum and clavicle until it hung only by its tendon and the nerve in its connective tissue. It was then swung over the deltoid—describing an arc of 90 degrees—and was sutured to the lateral margin of the clavicle at the acromion and to the lateral margin of the spine of the scapula. The direction of its fibers corresponded with that of the paralyzed and much atrophied deltoid muscle. The fibers of the sternal margin of the pectoralis were sutured to the lateral margin of the clavicle. The arm was immobilized in a horizontal position to prevent traction on the transplanted muscle. The nerve and fibers were found to be amply long enough. Six months after the operation the transplanted muscle can be felt distinctly and responds to electric stimulation. There is nothing to show the loss of the pectoralis major on the chest, the pectoralis minor seems to have compensated it, and the functional results are surprisingly good.

Mitteilungen a. d. Grenzgeb. d. Med. u. Chir., Jena.

Last indexed, page 1335.

74 (XVI, No. 3.) Ueber Appendicitis. T. Wette (Weimar).
75 Ein seltener Fall von Stenose des Magens und des obersten Dünndarmes (of stomach and upper duodenum). H. v. Haberer.
76 *Zur Embolie und Thrombose der Mesenterial-Gefässe (vessels). A. Rittershaus.
77 Zur Frage der Rezidive nach Blinddarmentzündung (recurrence after inflammation of the cecum). Karrenstein.
78 *Consequences of Temporary Closure of Ureter. Die Folgen des zeitweiligen Ureterverschlusses. E. Rautenberg.
79 *Nerve Grafting in Facial Paralysis from Neurologist's Standpoint.—Ueber Nervenpropfung bei periph. Facialislähmung vorwiegend vom neurol. Standpunkte. M. Bernhardt. (Berlin).

76. **Embolism and Thrombosis of Mesenteric Vessels.**—Rittershaus has had occasion to observe at Essen Ruhr a case of ileus as the consequence of occlusion of a mesenteric artery. The patient was a man of 71 with moderate peripheral arteriosclerosis, who had frequently complained of abdominal pains and vomiting. He finally presented the symptoms of ileus, and an operation was performed. Hemorrhagic necrosis of the lower part of the ileum was discovered, and by exclusion it was assumed to be the result of closure of the mesenteric vessels. The part of the gut affected was resected and, except for distressing singultus, the patient seemed on the road to recovery without pain, fever or pronounced peritonitic symptoms, but on the fifth day he succumbed to heart failure. Autopsy showed embolism of several of the branches of the mesenteric artery and resulting atheromatous changes in the aorta. A second patient was a man of 46 who had had articular rheumatism three years before, followed by trouble with the heart, dyspnea and general fatigue at the slightest exertion at times. A return of these symptoms was accompanied by others suggesting aortic insufficiency and stenosis with secondary enlargement of the heart and pericarditis. After transient improvement under heart tonics, signs of infarcts in the lungs developed with pains in the left lower abdomen and anuria with final heart failure. An embolus was found in the inferior mesenteric artery, evidently originating in the extremely atheromatous aorta. The infarcts in the abdomen had either been of long standing or had been compensated by collateral circulation. Only 6 out of the 55 cases known of occlusion of a mesenteric artery terminated in recovery. A review of the more recently published cases shows that the diagnosis was generally merely that of ileus of unknown cause. Sudden violent pain was the initial symptom in most cases, followed by colic-like pains over the entire abdomen. The part of the intestine involved was resected in 5 cases, with recovery in 2. Sprengel warns decidedly against operative treatment in a case of well-developed hemorrhagic infarct. When there is no

sharp limitation of the diseased and sound parts, it is wiser, he thinks, to refrain from resecting, as the resisting power of the peritoneum has already been lost, but Rittershaus advocates surgical intervention to relieve the patient of the tormenting symptoms of ileus, and if possible to resect the necrotic part, although both of his patients succumbed shortly after such an operation.

78. **Consequences of Temporary Occlusion of Ureter.**—Rautenberg's experiments were made chiefly on rabbits. Temporary occlusion of the ureter was invariably followed by increasing atrophy of the kidney substance, a progressive degenerative process terminating in chronic albuminuria and death. Dogs and cats seem more resistant.

79. **Nerve Grafting for Peripheral Facial Paralysis.**—Bernhardt's study of this subject from the standpoint of the neurologist suggests a number of points useful to bear in mind in attempting such an operation. His analysis of the published cases shows that long duration of the paralysis is not a contraindication.

Münchener medizinische Wochenschrift.

80 (LIII, No. 30.) *Hot Water-Alcohol Disinfection in Obstetrics and Abdominal Surgery.—Ueber den Wert der Heisswasser-Alkohol-Desinfektion für die Geburtshilfe wie für den Wund-Schutz von Bauchwunden. O. v. Herff.
81 *Erfahrungen in der Behandlung der spinalen Kinder-Lähmung (paralysis). O. Vulpius.
82 Zur Kenntnis der Diphtherie. G. Salus.
83 New Terms for New Conceptions in Immunity, etc.—Allergie. C. v. Pirquet.
84 Ueber Formen und Ursachen des Infantilismus. G. Anton.
85 *Ueber das Westphalsche Phänomen bei kruppöser Pneumonie der Kinder (in children). N. A. Kephallinos.
86 Poppy Capsules.—Ueber Mohnkapseln. Tischler.
87 Bilateral Abducent Paralysis with Intense Pain in Back of Neck, after Spinal Anesthesia.—Ein Fall von doppelseitiger Abduzenslähmung, verbunden mit aussergewöhnlich heftigen und lange anhaltenden Nackenschmerzen nach Rückenmarksanästhesie. M. Landow.
88 Ueber 2 Fälle von epidemischer Genickstarre (cerebrospinal meningitis). Broer.
89 Ueber Blutdruckmessungen (measurement of blood pressure). B. Fellner and C. Rudinger.
90 Die Elektrotherapie der Kreislaufserkrankungen (cardiovascular affections). L. Raab. (Concluded).
91 To Send Material for Examination.—Wie sollen Untersuchungsobjekte eingesandt werden? H. Durck.
92 *Relations between Cancer and Tuberculosis.—Die Beziehungen zwischen Krebs and Tuberkulose. W. Weinberg.

80. **Hot-Water-Alcohol Disinfection in Obstetrics and for Protection of Abdominal Wounds.**—It has been von Herff's experience at Basle that the Ahlfeld technic of hot-water-alcohol disinfection is admirably adapted for obstetric practice and also as a preliminary to laparotomies. In 5,000 maternity cases during the last five years in which it was used, fever was observed in a total of 15.7 per cent. from all causes; in 8.2 per cent. it was of puerperal origin. The total mortality was 0.7 per cent. and the mortality from puerperal fever was 0.09 per cent., while it was zero in the cases that developed in the institution. The alcohol shrivels the skin and tans it, as it were, preventing the escape of germs, and reducing the possibility of self-infection from the vicinity. The results of this method of disinfection have been so excellent in his experience that he considers himself not only justified, but bound to recommend this simple technic in the warmest terms to others.

81. **Principles of Treatment of Spinal Paralysis of Children.**—Vulpius' article was the opening address on this subject at the Lisbon congress. The first requisite of treatment is to render an orthopedic apparatus unnecessary. Arthrodesis may be all that is possible in cases of total paralysis of all the muscles moving the joint when the remains of function in the muscle are insufficient to prevent flail action of the joint. He has performed this operation on the ankle, knee and shoulder, but never on the hip joint, elbow or wrist. The joint is opened and scraped to expose and to freshen the bone substance at a number of places, the surfaces being left irregularly grooved. A silver wire is used to fasten the shoulder, but no fixation is used for the other joints, except immobilization in a plaster cast for at least three months. The result, especially with the shoulder, he states, is very good. The only ultimate drawback is the occasional consecutive scoliosis. In partial paralysis, tendon grafting is wonderfully effective. When possible he resects and transplants the entire muscle or tendon. If only partial transplantation is possible, he cuts the muscle up into its belly to obtain the strongest possible hold. He prefers "descending" transplantation, that is, he draws down the functioning muscle to the intact, paralyzed muscle. It is best to utilize muscles that have the same function as the defective ones, but this is comparatively unimportant; extensors can be transplanted on flexors and *vice versa*. As a rule, he sutures tendon to tendon, and refrains from periosteal fixation of the transplanted tendon when convinced of the adequate strength of the paralyzed tendon. He avoids the use of artificial silk tendons, as this leaves a foreign body and brings complications. Careful exposure of the tendon to be transplanted, carried up to its insertion, insures ample length even in case of periosteal fixation. The complete cure of the paralysis was obtained only in particularly favorable cases, but great improvement was constantly obtained, and this improvement was permanent in the majority of cases. In conclusion he warns against a blind, one-sided application of tendon grafting, while proclaiming that the treatment of paralysis has become an especially grateful field for orthopedics.

85. **Westphal's Sign in Croupous Pneumonia.**—Kephallinos found the knee jerk abolished in 49.2 per cent. of 65 children with croupous pneumonia. This occurred in some instances at a time when the lung findings were still dubious. In 12 cases in which the date of the return of the reflex was noted it was observed in 6 on the day of the crisis, in 4 on the following, and in 2 on the second day. He thinks that this loss of the knee jerk may be found a valuable diagnostic sign.

92. **Relations Between Cancer and Tuberculosis.**—Weinberg has been able to collect statistics in regard to the prevalence of tuberculosis in the families of persons dying of cancer in Stuttgart and vicinity. The tabulated findings speak decidedly against the assumption that the relatives of cancer patients are affected with tuberculosis more than others. His figures include the years from 1773 to 1902 inclusive.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

A TEXT-BOOK OF HISTOLOGY. By F. R. Bailey, A.M., M.D., Adjunct Professor of Normal Histology, College of Physicians and Surgeons, Medical Department, Columbia University, New York City. Second and Revised Edition, Profusely Illustrated. Cloth. Pp. 475. Price, $3.50 net. New York: William Wood & Company, 1906.

APPLIED BACTERIOLOGY, An Elementary Handbook for the Use of Students of Hygiene, Medical Officers of Health, and Analysis. Revised and edited by C. G. Moor, M.A., F.I.C., with the Coöperation of R. T. Hewlett, M.D., F.R.C.P., D.P.H. Third edition. Cloth. Pp. 479. Price, $3.00 net. New York: William Wood & Company, 1906.

THE DOCTOR'S RECREATION SERIES. In the Year 1800. By S. W. Kelley, M.D. Being the Relation of Sundry Events Occurring in the Life of Dr. Jonathan Brush during that year. Vol. III. Cloth. Pp. 421. Price, $2.50. Akron, Ohio: The Saalfield Publishing Company.

TOXICOLOGY. The Nature, Effects and Detection of Poisons, with the Diagnosis and Treatment of Poisoning. By C. M. Riley, M.D., Professor of Chemistry and Toxicology in Barnes University, etc. Third Edition, Revised and Enlarged. Cloth. Pp. 215. Price, $1.50 net. Philadelphia: P. Blakiston's Son & Co., 1906.

COMMENTARI DI CLINICA MEDICA Desunti Della Morfolgia del Corpo Umano. Prof. Achille DeGiovanni, Direttore della Clinica Medica Generale Della Regia Universita di Padova Senatore del Regno. Parte Speciale, illustrata da figure E Tavole. Vol. Primo. Paper. Pp. 429. Price, L. 8. Milan: Ulrico Hoepli.

THE NERVOUS SYSTEM OF VERTEBRATES. By J. B. Johnston, Ph.D., Professor of Zoology in West Virginia University, with one Hundred and Eighty Illustrations. Cloth. Pp. 370. Price, $3.00 net. Philadelphia: P. Blakiston's Son & Co., 1906.

THE MEDICAL STUDENTS MANUAL OF CHEMISTRY. By R. A. Witthaus, A.M., M.D., Professor of Chemistry, Physics and Toxicology in Cornell University. Sixth Edition. Cloth. Pp. 820. Price, $4.00 net. New York: William Wood & Company, 1906.

AIDS TO GYNECOLOGY. By A. S. Gubb, M.D., M.R.C.S., late Resident Obstetric Physician, Westminster Hospital, Fellow of the Royal Medical and Chirurgical Society, etc. Fourth Edition. Cloth. Pp. 136. Price, $1.00 net. New York: William Wood & Company.

HISTORY OF OSTEOPATHY, and Twentieth-Century Medical Practice, by E. R. Booth, Ph.D., D.O., Cincinnati. Cloth. Pp. 419. Cincinnati: Press of Jennings & Graham.

AIDS TO OBSTETRICS. By S. Nall, B.A., M.B., D.P.H., Cantab., M.R.C.S. Sixth edition. Cloth. Pp. 145. Price, $1.00 net. New York: William Wood & Company.